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December

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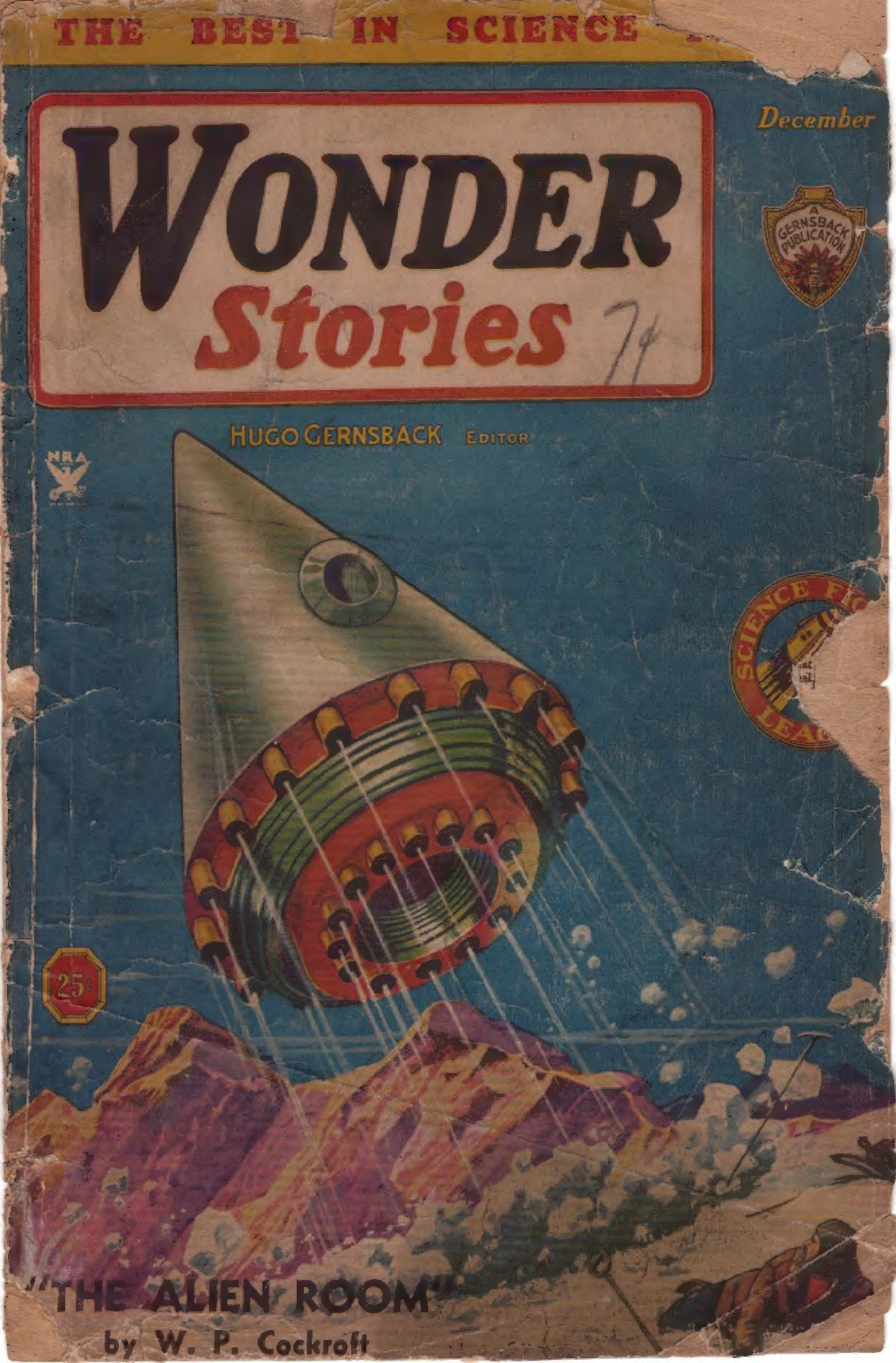

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THE MAGAZINE
OF PROPHETIC FICTION

Vol. 6, No. 7

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ON THE COVER this month we see a vivid scene upon Mt. Everest from "The Alien Room" by W. P. Cockroft. Cover illustration by the inimitable Paul.

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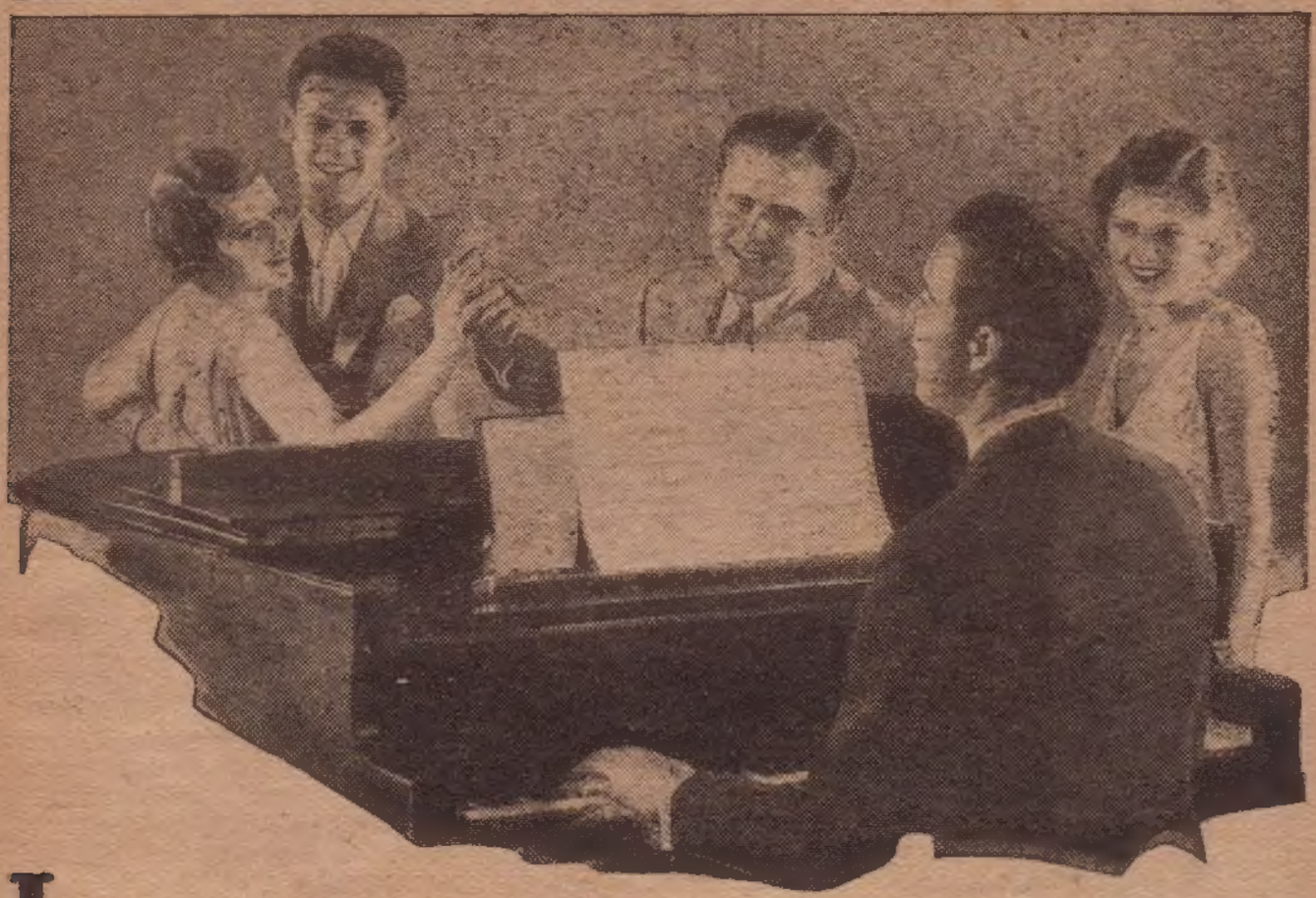
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VOLUME 6
No. 7

WONDER Stories

DECEMBER
1934

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HUGO GERNSBACK, *Editor-in-Chief*
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WONDERS OF FICTION

By HUGO GERNSBACK

"SEEING is believing" is one of the platitudes often uttered, but based upon a misconception. Seeing is *not* always believing; and a modern philosopher could make this the basis of an important book.

When you step to the next newsstand, or the next book store and buy a fiction magazine or a novel, you know all the time—consciously or subconsciously—that all the stories in either the magazine or book are, as the title indicates, FICTION; *i.e.*, something that does not exist. You do not believe for one second that the fiction story is true; you know all the time that it is purely invention, written by an author, and that 99% of the story is not based upon reality. Does this stop you from reading the story? Indeed not. You not only read such stories from beginning to end but, every month, year in and year out, you pursue the same plan in reading fiction that you well know is fooling you all the time.

The situation probably is unique in the animal world. You can show to a dog or a cat the most beautiful picture in colors or otherwise—the equivalent of fiction to the animal—and he will surely not be entertained by it. The dog may perhaps smell the picture, reflecting at first that it might be something to eat. He, however, immediately turns away in disgust. In other words, the animal is not interested in fiction; it does not entertain him. *The human being, however, goes deliberately out of his way to get fooled, and asks for more of the same fare.*

What is the reason for this strange behavior of the human race? Why does a pure fiction story hold our interest? Why does a motion picture, which is purely fiction from beginning to end, hold exactly the same interest; and why does the theater, where fiction is dramatized by human beings, do the same thing?

The underlying reason in all cases is, most probably, the same. The human being wishes to be amused. Subconsciously, he likes to play. Fiction, motion pictures, the theater, all are a game of some sort. In all cases, the author of the story, the motion picture director, or the actor in the theater, endeavors to fool you in such a way that you believe, *against your will*, that what you see or hear is true. It is a game which the author plays with you; and, the better he can play the game, the better you will like it.

In other words, if the author succeeds in making his characters so true to life that you exclaim, after reading the story, "What a wonderful, realistic piece of writing!" the author has won the battle with you; not only because he has made you believe, against your own convictions, that the story is not only plausible but, while you are reading, it has created the illusion that it is all true. And, the nearer the author can come to this, the greater he is and the better his story, his scenario, or his play. We instinctively classify the story in our minds as good, bad or indifferent; all depending upon how strongly the author can hold our attention and how much he can make us believe, once he has obtained our attention, that what he has written is not fiction but reality.

To do this, the author must resort to all sorts of tricks to create and hold your interest. The plot, the descriptions, the talk of his subjects must all inveigle you, against your own conscious mind, into believing that what you are reading is not really fiction but the actual truth. The careful and painstaking author will go to no end of trouble to create this illusion for you; and, the closer he comes to making you believe that his fiction is actually truth, the greater your applause for him and the greater your liking for the story.

(Illustration by Paul.)

A hole was made large enough for them to crawl through.

THE ALIEN ROOM

By W. P. COCKROFT

● **Now and then a really good science-fiction mystery story comes into our hands—such as the one presented here—and we take real pleasure in submitting it for the approval of our readers.**

Rarely has a story as short as this caused us to puzzle over inexplicable occurrences. The story has more or less of a surprise ending, and after you have read it, you will wonder why you hadn't thought it out for yourself. In this manner it is a lot like the work of O. Henry. While the conclusion is surprising, it is the only logical one.

Our new author, an Englishman, makes his bow to our readers with a masterful little tale of bewildering adventure.

● Perhaps the reader will remember the Moyston Expedition, which last autumn attempted to scale the heights of Mount Everest. If so, the reader will certainly remember that the newspapers said that the Moyston party had died on Mount Everest, died mysteriously. For three days the papers were filled with conjectures, then someone crashed to death in an aeroplane, and the exploration party was forgotten

But I know that one man came back from Mount Everest and reached Darjeeling, and there died. He was the insignificant man of the expedition, but he was also the only one to return. From the notebook that he left I have been able to make out the fate of the party; from the scattered threads of thoughts that he had jotted down I have been able to fit together the story.

How I came to have the notebook of the survivor I will now explain. I had come with George D. Mulliger, the explorer, as secretary-companion. We had been hunting in Bengal, something that I am not particularly fond of, so when the boss suggested that "we give the rest of the tigers a miss," I was quite agreeable. The heat, also, I believe, was beginning to trouble him, as he proposed that we go to Darjeeling. Owing to the height of this city above the plains, it is a noted health resort for the Europeans resident in Bengal.

So we went to Darjeeling and found it beautiful. There was nothing particularly beautiful about the city itself, according to European standards, but the surrounding country was all that could be desired. Luxuriant vegetation flourished in abundance, and in the distance could be seen the Himalayas, cloud-wrapped and lovely.

Six men went in the Moyston exploration party, but only one came back, and he died in this city of Darjeeling. His name was Wilde, and Mulliger knew him. So when we heard that a man had returned from the exploration party and was dying in this city, Mulliger went to see him. For myself, not knowing anything at all about either him or the affair, although I was interested in both (I must add that sheer laziness stopped me from doing anything else except lounge on the terrace of the hotel), I remained where I was and waited for his return. The first thing that he did when he got back was to drop a little notebook onto the table beside me.

"Read that," he ordered.

So I did read the entries in the notebook, and here is the result.

* * *

The Moyston Expedition for the conquering of Mount Everest had attained the height of 18,000 feet. Climbing was just becoming difficult; so far it had been comparatively easy work, but above them towered the ice and snow-covered peaks that they had to scale to reach the sum-

mit. They had just begun encountering the coldness, too.

Moyston, the leader of the expedition, stood looking though the binoculars as the others pitched camp. His gaze was directed to an unusual object that was protruding from the snow higher up the mountain, an object that glittered in the late afternoon sunlight.

"What do you make of it?" he asked, turning to Brett, another member of the party. Brett took the proffered glasses and looked through them at the spike-shaped thing. For several minutes he looked hard at it, then he lowered the glasses with a perplexed expression on his face.

"I cannot make out what it is."

"Shall we go and see?"

"If you like. Of course, it may be only ice that has formed in a peculiar manner."

"It does not look like ice to me," retorted Moyston.

He turned to the other men. "Leave that work for the time," he commanded. "Let us examine that object up there."

They commenced climbing, and as they neared it, they became convinced that it was something that should not be on Mount Everest; it was utterly foreign to the rest of its surroundings. It appeared to be made of polished silver, for in the sunlight it reflected like a beacon. Wilde, along with the rest, was thunderstruck at its appearance. Not until they reached it could they form an estimate of its height.

It stood about fourteen feet above the snow, and narrowed from a girth of eighteen feet at the base to almost a point at the top.

For a little while the wondering men stood looking at it and touching it. There were no projections of any kind, and it was as smooth as glass.

"Let us dig down around it," suggested Moyston.

The party commenced digging with their ice-picks, but found that it was likely to be a long task, as the deeper they dug, the more broad was the object.

The afternoon wore on, and Wilde suggested going back to the camp, leaving the work of unearthing until the following day. Moyston seemed as if he were about to agree to this suggestion, when one of the men announced that he had uncovered a projection. Interest was redoubled, and they worked with frantic endeavor to uncover whatever the projection was. In another minute the man stated that there was a hole in the object and the loose ice had fallen through. Another quarter of an hour passed, and by the end of that time, a hole was made large enough for them to crawl through. But inside the object it was as black as night and none of the men felt like venturing in. By this time they were all perspiring freely as a result of their endeavors, Moyston especially.

"After all this work, I intend to see what there is inside," he remarked and knelt down into the entrance of the hole. He struck a match, but it burnt out before he could get a good view of what was inside. He put his head out again. Anyone got a scrap of old paper?" he asked. Brett tore a few pages out of his notebook and handed them to Moyston who lit them and dropped them inside. His head again vanished as he peered in. Then he said, "I am going inside; it is not much of a drop."

He turned around and let his legs dangle over the edge, then followed with his body until he hung by his hands. For an instant he hung, then dropped. There was a faint thud as he landed and it sounded as though he stumbled over something.

"Are you all right?" asked Brett.

"Yes," Moyston answered. "I bruised myself a bit through dropping on something on the floor and it tripped me."

They heard him stumbling about in the dark for a while, then he called out: "Come in, some of you. It's all right in here."

The other men rushed to drop through into the darkness, for their curiosity was aroused. It appears that Wilde was the only one who did not want to go in. He remained on the edge, peering in as the others dropped to the floor inside. He

could not see anything beyond that they appeared to be in a large room, for the matches they struck did not light the place entirely.

● There seemed to be something on the floor beneath the hole, for every man who had entered had stumbled over it. Moyston now bent to see what it was and struck another match. His long-drawn "oh!" of amazement brought the others near to see what it was. Wilde, from his position above, was able to secure a good glimpse of the object. He judged it to be about ten feet in length; that was the first thing he noticed; the next was that it bore a great resemblance to the skeleton of a man, apart from the extraordinary length of it, and the size of the head, which was very large, proportionately much larger than the head of a ten-foot man would have been.

Without doubt it was a skeleton. It had been badly disarranged when the men fell on it. Greatly excited by the discovery, Moyston cursed as the match went out, burning his fingers. He struck another one and Wilde could hear the men conversing in low tones about the skeleton. It was not a pleasant looking thing to Wilde, the skull grinning up at him, and he shivered involuntarily. Brett seemed to tire of looking at it also. "I don't like the beastly thing," he exclaimed. "Let us have a look at what else there is."

He struck another match and made his way around the side of the room, keeping close to the wall, which was covered with all manner of strange objects. Some of these were long tubes that reached from the top of the room to the bottom, while others were circular, like plates. Farther along, Brett came to a large panel that was covered with a multitude of things. "Be careful!" cried Moyston, as Brett began moving some of them.

What occurred next was remarkable. The turning of one of the things by Brett caused the room to light up. With gasps of surprise, the men looked around at their surroundings, which were now easy to see.

The reason for the illumination was not obvious; it seemed to be in the very atmosphere itself. With the brighter light, the details of the skeleton on the floor were accentuated, and it looked very ghastly.

Wilde was now able to estimate the size of the room, but could not understand the reason for its peculiar shape. It broadened out to a diameter of twenty feet or more and was completely circular. It was of a much greater height than diameter. There did not appear to be a door anywhere. The floor was flat and smooth, except in one place where a circular ridge broke the uniformity of it. Moyston went over to this, but could not satisfy himself as to what it was. Wilde heard him saying something about "it might be a trap door" to Henley, one of the other men, but that was all. Wilde was inclined to agree with him, for there was a similar ridge round the hole that he was looking through.

Moyston made an attempt to open it, but could not, for there was just a circular ridge without anything to grasp. Brett was still looking at the walls. All the objects were fixed to it in some manner that Wilde could not understand. He formed a theory that perhaps some of these controlled the doors, and cried out to Brett who was handling them.

Brett left them alone and turned his attention to the large panel that was fixed to the wall. It was about five feet long and four feet wide, but was curved, of course, to fit the wall. To Wilde the room was utterly unlike anything that he had seen before. The things which were fixed to the panels all had the curve in them; there were no straight lines in anything except the floor, and even that seemed slightly convex. Wilde turned his head around and looked at the top. He was able to see that the ceiling came in a slight curve above him. The point that was visible on the outside was not visible inside; indeed, there must have been some fifteen feet of enclosed space. It occurred to him to sound it and see if it was hollow. There was not a hollow ring to it, so he decided that it was solid. At the sound

of his knocking, the others looked up, startled.

Wilde explained. "I was wondering if this were solid."

Moyston was perplexed. "I cannot understand this at all. Who has put this thing here? And if so, how did they bring it up here? Or is there a race that lives under the ground in the heart of Mount Everest?"

The others could not answer.

Moyston returned to the projecting disc on the floor and stared at it. "Throw me an ice-pick!" he cried to Wilde.

The little man looked around, found one near, and threw it down to Moyston. The room was filled with dull reverberations as he wielded the pick and struck with all his strength again and again at the disc. But there was no response; the plate never flinched.

After five minutes of this strenuous work, Moyston desisted.

"It is no good," he remarked.

"Let us try some of those switches, or whatever they are," suggested Henley. They went to the panel and Wilde withdrew his head with alacrity as they began moving the objects. It was as well that he did so, for a door slid across the opening.

He sat back on his heels, staring at the closed door. Then he became aware of the changing weather conditions. The afternoon had passed and evening was drawing nigh. Large clouds were banking up on the horizon and the noise of the wind was becoming louder. A storm was brewing—

● The door shot open rapidly. Carefully Wilde put his head through.

"Do not shut it again," he cried. "Have you managed to open the other door yet?"

"No," replied Brett. "You are all right now; we will not shut that door again."

"One of those things that you are moving may shut it," commented Wilde.

"It is not likely," Brett said.

"When are you coming out?" asked Wilde. "Night is coming, and a storm."

"Is there? We will be out in a minute," answered Moyston. Brett turned to the panel again.

"I wonder what those long objects are?" asked Henley.

"Perhaps gas cylinders," remarked Brett.

He commenced to study something else on the wall; from where Wilde was it appeared to be a kind of map, and the words of Brett proved that he was right.

"Look at this!"

"What is there extraordinary about it?" asked Henley.

"Cannot you see? It is a plan of the solar system!"

"You are right; so it is!"

Moyston and Brett looked at each other. "What does it mean?" asked Brett.

"I think I am beginning to understand," said Moyston, slowly.

"It is a race of people that live underground, in this mountain, and this is their observatory. They come into this room to study the skies and have worked out the solar system."

"Credible," nodded Brett, "but what of the skeleton?"

"I do not know. It will be one of the race, of course. Perhaps he has been forgotten. He may be the astronomer and the people below have forgotten him for some reason or other."

"Possible. Well, yours seems the only plausible theory, Moyston. It is the only one that accounts for the skeleton. But for that I should be inclined to believe that someone had built it in secret, perhaps some scientist from Europe. Yet that would be impossible; the fittings of the place prevent that. But where is the telescope?"

Moyston looked around him. "One of those instruments on the panel may be that. And yet it reminds me of something else," he went on. "It is familiar in a vague sort of way. I cannot say how. It is like nothing that I have ever seen, but perhaps something that I have heard of."

At his words Wilde again studied the construction of the place. Certainly in a

dim sort of way it reminded him of something, but what?

"This door through the floor intrigues me," remarked Moyston.

"I am certain that it is a door."

"It is rather interesting to speculate on the possibility of what is on the other side," remarked Brett.

"Perhaps there is a vast city that we have never dreamed of. I would give much to be able to see what there is underneath it."

"It must be, as you suggest, leading to an underground city; it is the only possible explanation."

"The only one that I can think of."

"I wonder if they have heard us hammering at the plate?"

"If they have, they will be paying us a visit."

"Have you observed these fittings?" cried Brett, in an excited voice.

"Why, what is wrong with them?" asked Moyston.

Brett was soon examining the fittings on the panel.

"The metal they are made of . . . . Look . . . . Is it . . . . gold?"

Moyston scratched at the metal with his penknife.

He looked at Brett. "Either gold or something very similar," he said.

"What a find!" whispered Henley, rubbing the metal with a cloth.

The other two men looked at each other, a question in their eyes.

Brett turned to them. "Gold! We are rich . . . ."

"Brett!" said Moyston sternly.

The light of avarice died in Brett's eyes.

"All right," he said offhandedly. "Treasure trove," he added. "Finds keeps, you know."

There was a short silence, then Moyston turned to a large plate of burnished metal that was set in the center of the panel.

"I wonder if this is a kind of telescope?"

"It may be," answered Henley. "Let us try to move it."

They got hold of the plate and found that, by their combined efforts, it moved around easily. But nothing else happened.

"There is a small thing like a switch at the side," remarked Henley as he turned it.

A violet illumination crept over the plate now, a soft and beautiful color that grew ever brighter. Objects became visible upon it, and soon a vivid reproduction of the crags of the higher part of the mountain was visible. The men moved the plate farther around, and got a view of a cloudy sky. Further turning, and the violet grew deeper as the sky disappeared from view.

"This is a kind of camera obscura!" cried Moyston.

Wilde, from his position outside, called to them. "It is beginning to snow."

"All right; we are coming out."

But Moyston did not come out, nor any of the others.

Wilde withdrew his head again when Brett began manipulating the switches on the panel. There was a violent concussion and Wilde was sent flying yards over the ice. He sat up in time to see the entire object containing his companions shoot into the sky and disappear from sight in a few seconds, or so it seemed to him.

● Wilde was too astonished to do anything but sit there for a few minutes, half-expecting it to come back again.

Then he got to his feet and limped to the edge of the hole from which the thing had shot, and looked down. There was a great crater where it had been, but nothing else. There was no sign of a way through the mountain. He sat down on the edge and stared at the sky until it came to him what the thing really was. It came so suddenly that he jumped to his feet with the realization. It was a spaceship! The incredible truth was too much for him to appreciate at once and he stood trembling on the edge of the hole—until he realized that it had gone forever and his companions as well.

(Continued on Page 870)

HIGHER JURISDICTION

By D. D. SHARP

● Gatti Fenton pointed to the rod of sunlight which stabbed the darkened room. For two tedious, uncertain years he had struggled for that rainbow of promise.

"Look!" he demanded of the skeptical man standing beside him.

The man was Alvin Morehouse. His presence there in Gatti's laboratory was a mark of Gatti's indomitable persistence. Morehouse had not believed, did not yet believe, and still he had come. Sometimes a young man's faith does move mountains.

Morehouse was more than a mountain. He was *Power* in a field of power. His corporation manufactured the current which lighted the city, and almost every other city of the land. He was a prodigy of financial strength, but he could not be called an imaginative man. On the contrary, his ideas were cast to the concrete moulds of cost and profit.

His fat little eyes watched the beam of light with growing disgust. Impatient puckers crept into the synclines below his hard, straight mouth. "So that's the big discovery?" he scoffed.

Gatti gasped. He had thought Morehouse would understand at once what he had to offer. "I've bent it," he stammered. "It's revolutionary—like radium—or electric lamps!"

"You misrepresented the thing," Morehouse snorted as he started for the door. "There's nothing in it to interest the Associated Light and Power. We might buy an invention, but we are not interested in strange freaks."

He opened the door so that the bright sunlight outside dissolved the bent rod from the aperture. He did not ask a single question. He was not even sure that Gatti had done anything unusual.

"Hold on a minute," Gatti insisted, made bold by the peril of failure. "You're a big business man, Mr. Morehouse, but you don't know kilowatts when it comes to bent sunlight. There is a greater field than you suspect. Light has weight. That was proved by the total eclipse of May, 1929. Einstein—"

"Einstein's a nut," Alvin Morehouse puffed and pulled down the gray brim of his soft hat.

"But you don't understand. Bent sunlight will make money, millions! A working model would not be very expensive."

Morehouse hesitated, sniffed as a very old fox might sniff for a trap. Gatti pressed his point. "It's quite simple in a way. Light has weight, like rain, like anything else, only it moves so fast that even the earth, large as it is, draws it very little from a straight line. But I have found a way, a magnetic field that will bend it from a direct course, drag it down from its straight path across the sky!"

"Balderdash!" Morehouse grunted as though a change of opinion put his dignity at stake.

"You saw it with your own eyes," Gatti exclaimed with exasperation that anyone should be so stubborn. "I tell you, with large enough magnetic fields I can make the old power systems obsolete!"

It had slipped. Gatti knew he had said the right thing at the wrong time the moment he spoke it.

Morehouse turned upon him with sudden enlightenment in his face. His eyes glared balefully under a gathering frown. "Listen," he barked nastily, "do you think you can bluff the Associated with that kind of piffle? You couldn't give me your invention if I believed it would work. Bent sunlight? Anybody's property?"

When Alvin Morehouse was definitely gone, Gatti went back inside the room and closed the door. The beam of light was still bent, for he had not turned off

the machine. Instead of striking from the small orifice to the opposite wall, the beam shied downward at an angle to strike the floor. Gatti's spirits too, hit the floor. If Morehouse was stampeded so easily, who else would be interested?

He switched off the current and left the house. Right then he decided to get a job driving a truck where one did not work for two years in order to discover that the big things men want so badly are the hardest to make them take.

But he did not drive a truck. He organized his own company. He was so sincere that a school-teacher here, a bookkeeper there, dug into their savings and backed him a hundred and sometimes more. They believed in him, and sanguinely thought of Ford and other unknowns who had big ideas that had made fortunes for their backers that all the steady grubbing of a lifetime could never yield. All in all it was a good gamble, for Gatti spent their money with a miserly care he had never given to his own.

Westward from the city was raised the long low powerhouse, and a high fence to bar the magnetic field from prying eyes.

● Came the great night for the real test.

Gatti had not claimed too much. He had only promised sunlight until nine o'clock when most folks went to bed, but that would take the big load from the powerplants and reduce home and municiple lighting costs millions of dollars a year.

He swung the switch soon after dark. The motors hummed and the current grew warm in the great coils, and lo!—the miracle was even greater than the population had dreamed. The sun rose up out of the west and shone down with daylight brightness!

To the awed spectators, Gatti explained. The eye sees only in straight lines. When the sunbeams were bent down to reach the eye instead of shooting on across the earth into the void, the sun seemed to be in the direction from which the light came, regardless of the fact that it was still far below the horizon. A mirror would have done the same thing if it could have been hung high enough to catch the passing light. That being impossible, he had diverted it in another way.

It was a great night for Gatti—newspaper reporters, telegrams, inquiring scientists. The whole world seemed suddenly Light Gravitation conscious.

Early the next day, Morehouse called by phone. Gatti was expecting the call; in fact, he had banked upon it. He was an inventor, not a distributor. Needed was the efficient, practical machinery of the Morehouse organization. Gatti had discovered and perfected. Imagination was done with its chore. Morehouse and his contemporaries must build upon it.

"Fenton," barked the plutocrat, "what's this I hear, anyway? Still trying to badger the Associated?"

"Hardly," Gatti denied. "I want to deal with them. You can see now what we are prepared to do. I'll see you any time you want to talk 'buy,' Mr. Morehouse."

Gatti hung up the phone quite deliberately and smiled at the bent ray of sunlight which spotted a once dark corner of the room. Morehouse would buy; that much was certain.

There was a knock upon the door of his now antiquated laboratory. He opened it to admit a gaunt man in a baggy suit.

"You Gatti Fenton?" the man demanded bruskly.

"I am," Gatti admitted wondering who the man was.

The man produced a document.

In this world, at least, there are two laws: those immutable and lasting, governing all space and all science, and the instable statutes of men. The immutable laws were with Gatti, but the statutes were behind Morehouse, and the statutes had higher jurisdiction. There was a franchise, it seemed, which gave the Associated exclusive right to light certain cities and towns for a long term of years. That franchise made Morehouse greater than Joshua, for while Joshua was deemed great because he supplicated the Lord and the sun stood still, Morehouse supplicated the Court, and the Court *removed the sun!*

THE END

(Illustration by Paul)

The black flood finally burst the last barrier and raced down the bed of the river which separated the city into two portions.

THE BLACK RIVER

By JOHN M. CORBETT

● Man is forever penetrating further into the Unknown. Every year there are secrets solved that have puzzled him for ages. Astronomy — physics — geology — meteorology—chemistry are steadily increasing their realm of knowledge. Our "Machine Age" is a period of activity surpassing all other ages in history.

In the present story we are concerned with geology. Oil companies, in quest of greater fields, have already penetrated the crust of the earth for nearly two miles—a negligible distance considering the 8,000-mile diameter of our world.

Here we are brought face to face with a multimillionaire oil magnate who has been lured on to drill a well four miles deep in order to strike a lode greater than any yet discovered.

Will the forces of nature stand idly by without interference while this prodigious feat is being accomplished? Is it possible to penetrate this fantastic depth without catastrophic results?

The feature of this story is its O. Henry-like ending which comes without warning and gives the story a peculiar twist and a distinctive touch.

● The spacious lobby of the Los Angeles Biltmore Hotel was over flowing at the end of the third day of the 1936 convention of the American Petroleum Institute, the delegates slowly drifting through the revolving doors of the Pershing Square entry, or gathered in little groups about the great room. One of these groups, about which there seemed an attitude of aloofness and defiance, made its way toward the elevators, the short, rather portly gentleman in the lead nodding curtly now and again in response to the occasional word of greeting that came from those in the milling throng. As the doors of the elevator clanged shut on his party, there was a sudden acceleration in the hum of conversation.

Silas Mortimer—for it was he who led the group—had created a sensation in that day's meeting by hurling a bomb into the well-laid plans of the Institute looking toward the conservation of petroleum resources. He had flatly refused to be further curtailed in the production and development of his enormous holdings, and threw down the gage of battle when he declared himself on the verge of a gigantic development program which might increase the output of his Southern California properties by fifty per cent. Counting his resources at close to two score millions, the dynamic oil man presented a grave threat to the work which the A.P.I. had been struggling to complete for the past ten years.

Among those connected with him in his new project, and who had now accompanied him to a conference in his suite above, were his son Arthur, a promising young mechanical engineer of twenty-seven years; Wilfred Black, his chief geologist; Randolph Washburn, general field superintendent; and Albert Sanderson, scientist and engineer of international fame, who had charge of the secret work of Mortimer's plans.

"Just as we get things under control, that avaricious old scoundrel has to go and throw a wrench into the works!" snapped a thin, wiry man to his companion as they threaded their way toward the street.

"It's a great pity the Government does not see fit to step in, Ericson," responded the other. "Perhaps they will—when it's too late!"

In his luxurious suite on the eleventh floor, the defiant multimillionaire at that moment dropped his bulk into an easy chair with a grunt.

"Chairs, gentlemen," he snapped, with a wave of command about the room. "Got your plans, Al?"

His voice, something between a bark and a whistle, contained the assurance of unlimited power and commanded instant and unquestioning obedience on the part of his subordinates. His alert, snapping black eyes beneath the shaggy brows took in at a glance the papers which his chief engineer now extracted from a brief case and laid on the table before him.

"Good! Now Ran," to Washburn, the superintendent, "the die is cast, and tomorrow you get on the job first thing and get preliminaries under way. I want the shaft to be ready for the big job by a year from date, if possible. Run three shifts. Albert, see Ralston at the plant in the morning. Arthur will be your assistant as planned. Get busy on those designs and have the stuff ready when Ran gives the word. This thing must move, and move fast! Don't allow expense to stand in the way. Ralston will turn half his engineering force over to us, and we appoint our own inspectors. You fellows know what we want; now go to it!"

As the rest filed out, Arthur remained seated on a corner of the table, thoughtfully toying with his cigarette.

"Dad!" he exclaimed as the outer door closed, "do you think we're right in this?"

The older man's brows lifted. "Why not?"

"What will the A.P.I. do?"

"To hell with the A.P.I.! They're all right in their place, but when they start interfering with my business, I'll soon show them where to get off. The stuff's there, and I'm going to get it out!"

"Can't say I think you're altogether right, old top; but I'm with you, you know, at any rate. Of course, it may queer me with—"

"Margy?" his father prompted. "Well, son, if she's the sort I think she is, she won't let that bother her much."

"Well—I hope not."

The boy rose and reached for his hat.

"I'm running out there now. I promised to meet her at five, and I've got just twenty minutes. We're going out to the Blakes for dinner, you know."

He left his father immersed in thought and an ever-thickening cloud of cigar smoke, and descended to the street. Walking rapidly down Olive, he crossed Sixth Street and turned into the parking lot where he had left his car. Fifteen minutes brought him to the residence of Henry Erickson, his fiancé's father, secretary of the A.P.I.

● The girl ran down the steps as he drew up to the curb, and they were off to the harbor, where the Blakes, old friends of both, had just completed a beautiful new home in the Palos Verdes hills. As they slid swiftly along Western Avenue, Arthur spoke briefly of the outstanding event of the day; and though somewhat upset, the girl, to his relief, did not hold him responsible.

"You know, I've tried to stop Dad," he said, "but when he once makes up his mind, dynamite cannot jar him loose. But if things look too raw, I'll refuse to go through with it in any capacity. I'm interested only in the engineering end of it."

"I know, dear," she replied, laying a hand upon his arm. "Father is exactly the same when he becomes obsessed with an idea; I'll explain how you stand to him, and I do hope he will not feel harshly toward you or your father."

"Good girl! Dad said you would understand."

By six they were swinging up the long curves through the hills, and a few moments' stiff climb brought them to their destination. The Blakes had chosen well! On the rounded summit of one of the highest points in the Palos Verdes, a plot of several acres was beginning to show the result of skillful landscaping. Set at a point where an uninterrupted view was to be had of the sparkling Pacific on one hand, and of the great Los Angeles harbor on the other, the low rambling structure of Spanish stucco with its beautiful appointments seemed the center of a veritable Eden.

Surmounting the house, which was of one story for the most part, a spacious lounging room completely glassed in

offered a luxurious retreat from which to feast the eye upon the far-flung panoramas which swept on every side. The sea to the west was reflecting the scarlet of a perfect sunset. As they stood gazing, the hoarse bellow of an incoming Hawaiian liner floated up to them, followed an instant later by the clear notes of a bugle from Fort McArthur which crouched on the low hills above Point Firmin. The liner rounded the breakwater, and slipped gracefully past the grim row of anchored battleships, a white feather at her bows. Across the graceful curve of the coast reared the delicately etched sky line of Long Beach, five miles distant. Turning half around, one's eye traveled from the near-by Redondo, on up a coast closely built up with resorts, till in the dimming distance, the dusky blue of the Santa Monica mountains faded into the evening sky.

Turning at last to the house, they found their hosts awaiting them, and they were greeted with the effusion and familiarity which denotes an old and dear friendship.

Arthur Mortimer and Harmon Blake had been boyhood chums. Blake was a prosperous consulting engineer with offices in the city; his wife had known Marjory Erickson intimately for some years. While the girls wandered away to inspect the house, the men settled themselves comfortably before a cheerful blaze on the great hearth in the library and plunged into a semi-technical discussion. Arthur told of the uproar caused by his father at the meeting in the Biltmore. Blake readily sympathized with the delicacy of his position in regard to Ericson, but openly rejoiced at hearing that the great experiment would now go forward.

"You've promised to tell me all about it, Art," he reminded, "but let it wait till after dinner. We're having it early, you know, since you folks have insisted on such an early return."

"Sorry, old man, but I must be on hand bright and early tomorrow. We have all our designs to go over, and must start getting the working drawings out for the shops and pattern makers. I'll give you the dope as far as we've gone after we eat," he replied as they rose in answer to a summons from the dining room.

CHAPTER II

The Big Project

● "Well, Harm, here's the way things shape up," Mortimer resumed the chief topic as they again settled themselves before the fire and lit a couple of Blake's fragrant Havanas. "You know Black, Dad's geologist, has studied the thing for years, and he has the old man pretty well convinced. Personally, I don't know much about that end of the game. But Black has traced out the structures of every field in Southern California, and having gained control of Sanderson's revolutionary patents and designs, Dad is determined to go down twenty thousand feet if necessary to reach the immense pool—a sort of Mother Lode, as it were—which Black swears will be found where he has indicated. We have already acquired the necessary property on the quiet, and tomorrow sees the real start!"

"But Art," interrupted his host. "You say twenty thousand feet! The heaviest drilling rig now built will not stand over ten or twelve! What sort of equipment are you figuring on?"

"I'm coming to that in a minute. In the first place, we will need no derrick. Our plans call for a shaft eight feet square to be sunk eight to ten thousand feet. When a suitable formation is found in that neighborhood, we will cut out chambers to the side from which to start our actual drilling operations. A heavy duty lift will be installed in the shaft to handle the machinery and supplies, and to bring up the excavated earth. This part of the work will be under Washburn, while we are rushing plans for the drilling machinery, which should be completed by the time he is ready."

As Arthur warmed to the subject, he rose and paced to and fro, his eyes snapping with the true technical man's inter-

est in an unusual problem. Blake followed his words no less eagerly, his professional appetite assimilating the gist of the proposition with avidity.

"You'll get some idea of the job, Harm," Arthur went on, stopping before him and emphasizing his words with characteristic gestures, "when I tell you that our drill hole will be forty-eight inches in diameter!"

"Great guns! What size drill pipe will you use—and how about casing?"

"There will be no drill pipe. The bit will be operated on a compact unit which will be suspended on steel cables. It will be electrically driven—but let's start at the beginning. As I said, when we enter a suitable formation around twenty thousand feet, one which will support our machinery under gigantic loads, chambers and tunnels will be blasted out and a short parallel shaft sunk about two hundred feet deep. At the top of this secondary shaft will be placed our hoisting machinery and crown block. The dead end of the hoisting cables will be led through a tunnel from the hoist to the main shaft, and over a block into a recess cut in the walls of the shaft to counterweights hanging far below in the sump well.

"The size of our bore will permit men to pass down to the drilling unit at any time for inspection or repairs, without withdrawing it from the hole. However, it will be as self-contained and automatic in action as it is possible to make it."

"But the torque reaction on your unit will be enormous; how do you intend to overcome that?"

"In the first place, its weight will be very great. Then we will provide pointed arms, or sprags, which will grip the sides of the hole and offset any tendency to turn. Lastly, our drill will really consist of several drills. First there will be an outer shell, or sort of reamer, which will keep the hole to gauge. Inside of this, and slightly preceding it, will be twelve six-inch drills, set staggered and each turning in a direction opposite that of its neighbor. The central or pilot drill will be eighteen inches in diameter, and will precede the staggered drills by about ten feet, turning opposite to the direction of the outside reamer. Do you follow me?

"The whole will be driven by a powerful vertical electric motor of special design, through a system of gearing in the body of the main casting. It will be self-oiling and adjusting. By manipulating the switchboard at the surface, any set of drills may be operated independently of the others."

Blake scratched his head as his friend stopped for a moment to relight his cigar.

"Sounds plausible, so far, Art. I begin to see light. But how about your mud fluid, and how do you handle the casing?"

"We'll use only enough fluid to keep the drills cool and to mix the cuttings. We will maintain circulation by means of a special slush pump incorporated in the body of the drilling unit, driven through gearing from the main motor. The surplus fluid will be brought up through a pipe line that parallels the main cable, and deposited in settling tanks mounted on wheels in the main cross drift at the bottom of the surface shaft. These will be rolled onto the elevator when the water has drained off and dumped. After we are down the first few hundred feet, we will use a special casing that we have developed. Each length will be rolled from a sheet of steel cut to the right size, with the edges and ends flanged to take a lock fitting. The sheet will be rolled into the form known in the mills as a skelp, leaving an opening along the sides. An end view of a section of this casing will be a spiral, with the ends of the spiral left about a foot apart. A device which we will call a casing setter, will take each section, lower it *through* the casing already set, and upon reaching the bottom, expand it, clamp the edges together with a lock strip, and at the closing of a switch, electrically weld the entire length of the joint! The joined section will then be raised till it butts against the lower end of the last section set, another locking ring automatically clamps the ends together, and the two are in turn welded together."

● "Sounds fine, Art," said Blake. "But I should think that there would be great danger of fire in case gas develops. However, I suppose you are ready to explain that away!"

"Right you are, old man. That was one of our most serious problems. All electrical apparatus on the units will be shielded by several shells of wire gauze to obviate the danger there. In our casing expander will be a very sensitive electrochemical device which will instantly prevent current being thrown into the welding arcs if any amount of gas is detected. Of course, there is always an element of danger connected with work of this nature, but we shall do all that is humanly possible to prevent serious mishaps."

"Well, by George! You've certainly got things down to a gnat's eyebrow! I'd give a good deal to be able to carry out such a fascinating experiment. You don't know how sorry I was that I was tied up with other stuff so that I could not work with you, when you folks approached me."

"We were, too, old man. As I told Marjory, I would certainly hate to lose the chance. If only the A.P.I. were not against us!"

"Well, perhaps it will turn out all right in the end. Even if you don't get what you are going after, the industry should benefit from the results of your experiment. By the way, is the location still a secret?"

"Not now, since every one will know in the morning. We will 'spud in' in the San Fernando Valley, between Burbank and Van Nuys, close to the the L.A. River."

"But my gosh, Art! There's no oil in there, is there?"

"No surface indications; but Black's data point to a big strike if we go as deep as planned."

Arthur took out his watch.

"Heavens, man, it's late! We'll have to be going, else I'll be useless tomorrow. Where are those women?"

The rig lights of the Redondo-Torrance oil fields twinkled below them as they went out to the car a few moments later, and off to the right, the vast Signal Hill field winked back. Little was said as they raced back to the city; and leaving Marjory at her door, Arthur headed across town to his rooms near the great plant of the Ralston Oil Well Equipment Co.

CHAPTER III

Momentous Plans

● Two weeks passed swiftly. The convention of the A.P.I. closed, after drawing up a resolution deprecating the action of Silas Mortimer in defying the wishes of the majority, and the body had accepted his withdrawal from the Institute with mingled feelings of relief and concern. A petition was also forwarded to the various state governments involved, praying for early legislative action "in curbing the selfish and avaricious methods of certain unprincipled operators in the fields."

At the great plant on Alameda Street, Arthur and Sanderson were plunging into the work of organization and design. The various units were allocated to men skilled in that particular line, and Sanderson kept in constant touch with all phases of the work as it got under way. To Arthur, as his assistant, he gave the task of working up the layout drawings for the drilling unit itself. This presented the greatest problem before them, but following the roughly drafted ideas of Sanderson, he soon had the task well in hand. There were numerous conferences with the plant engineers, superintendents and foundry men.

In the meantime, Washburn had been doing things at the site of the shaft. A steel building was rapidly rising, and the shaft itself started. A spur track had been laid to the property, and tons of material began to arrive daily. A high barbed wire fence was erected around the grounds, and only those with permits from the head offices were admitted.

The excavating machinery was in itself a marvel of engineering genius, and all were highly gratified with its initial tryout. It ripped into the gravel at a speed which outstripped the work of installing

the hoisting machinery and dumping apparatus which was to handle the steady stream of débris which passed through its rapacious jaws. By working three shifts, however, the auxiliary machinery was ready by the end of the month. Then the work began in earnest.

Four sections of land had been acquired for the site; and as the dirt came from the shaft, it was dumped from elevated tracks that radiated like the spokes of a wheel, the hub of which was the shaft house. The embankments thus built up soon began to form the boundaries of huge reservoirs, which Black was confident would some day in the near future receive the flow from the underground stores of black gold.

At the close of the convention at the Biltmore, Marjory's father had taken her East on a business trip, where they remained until well into the summer. On her return, however, three months later, Arthur made an appointment to take her out to the site.

It was a beautiful cloudless morning in July when he called at her home; and they drove through Hollywood and Cahuenga Pass toward the San Fernando Valley. And hour brought them to the gates of the great works, near the juncture of the Lankershim and San Fernando Boulevards. A scene of great activity met their eyes as they turned in to the property. From the shaft-head, electric locomotives drew strings of dump cars along the elevated tracks, and as the desired point was reached, these were quickly flipped over, spilling their contents in a cloud of dust that had by now settled over everything near by.

Leaving the car, they entered the steel and concrete building which covered the mouth of the hole, passing between immense Diesel engines that turned whirring dynamos which furnished power to all the equipment. Soon they came to where the shaft gaped black, guarded by a tight fence of woven steel wire. Leaning against this, they awaited the appearance of the cage with its next load. At one side was a large panel covered with switches and levers, colored lights, and bells, all under control of the engineer in charge. As they watched, a bell tinkled and a green light flashed. The waiting engineer threw in a couple of switches and grasped the handle of a rheostat control. A motor hummed, the great steel cable tautened as it felt the grip of the hoisting drum, and in four minutes, the cage rose in view laden with three dump cars of dirt, one above the other. Three tracks at different levels received them, and the cage dropped from sight on its return trip with three empties.

"We are down over two thousand feet now," said Arthur after inspecting the automatic depth indicator on the switchboard. "The excavator is passing through a stratum of limestone. Come over here, and we'll see them test the samples from that last load."

Stepping into an enclosed room by the tracks, they watched while experts tested the samples taken from the cars just brought up. On one wall, a column resembling a huge colored thermometer was placed. As each sample was tested, an operator recorded the result together with the depth on this column. Arthur explained that a complete copy of the master log, with all information as to the progress to date, was each day forwarded to headquarters where it was studied and filed for reference.

● Day by day and week by week the great mechanical mole ripped its way down through the earth, spewing forth a never-ending stream of earth that grew into the great levees under the radiating tracks. Day by day Arthur leaned over his drawing board or haunted the shops to give personal supervision to some particularly difficult piece of work. The summer and fall passed away, and the new machinery began to take form as fast as castings could be poured and machined. Every unit must be assembled and disassembled, tried and tested till it had proven worthy under the most rigid inspection. Then the larger machines must be taken apart and made ready to ship in sections, to be later

set up in the underground shops of the great project.

The last of February saw the first actual test of the drilling unit, and aside from a few minor difficulties to be remedied, gave complete satisfaction to its designers. It was a massive and at first sight, a complicated mechanism; but to the minds which had conceived it and which had passed countless times over every detail—each bolt, gear, and bearing—it stood stripped of mystery, merely the highly efficient and satisfactory culmination of another problem.

By now, the shaft had been sunk close to seven thousand feet, and the engineers were of the opinion that in the hard rock strata, through which the excavator was now passing, would be an excellent foundation from which to launch the actual drilling work. Consequently, Silas Mortimer called another conference in his rooms at the Biltmore.

Arthur and Sanderson, accompanied by Ralston, who had been invited, were the first to arrive. Soon all were on hand, and a fog of smoke began to thicken in the room. Washburn, who was the last to arrive, was spreading some last moment's reports on the table.

"Gentlemen," the voice of the elder Mortimer cut through the low hum of conversation, "we all seem to be here, so we may as well begin. What's your latest, Ran?"

The superintendent took up a paper and cleared his throat.

"The latest record received from the shaft house one hour ago, Mr. Mortimer, says that the excavator is at the seven thousand, one hundred and thirty-five foot level, and has passed through two hundred and seventy-eight feet of hard granite structure, which Mr. Black and Mr. Meade agree is very suitable for the purpose of anchoring the machinery and as a base of future operations. We have cemented and sealed off three major water stratas, and have encountered several light showings of oil sands, from one of which we are taking enough gas to operate several of the auxiliary engines about the surface works."

He resumed his seat, and Mortimer motioned to Black.

"What do you think of placing our machinery at the present level, Will?"

"As I have told Washburn, Mr. Mortimer, I doubt if we will encounter another such advantageous structure within five thousand feet. This formation coincides with the outcropping above Ventura almost perfectly, and should attain a thickness of between four and five hundred feet. It is gratifying to us—and to myself especially—that the bore log is beginning to bear out my predictions as to the trend of the strata in this region. While I had every confidence in the results of my studies and the showings of our electric and radio apparatus, the geologist at the best must take some long chances.

"In view of the facts, and that the drilling machinery can be available by the time we are ready for it, I should unhesitatingly advise an immediate start on our drifts. I would suggest six thousand nine hundred feet to the floor of our top drift, and has already been decided, two more at one hundred feet apart, which will bring the lowest level to seven thousand one hundred, which level will be the starting point of our bore. Add another two hundred to the depth of the main shaft for a sump, which will bring it to a total of seven thousand three hundred."

"Are the things at the plant ready for shipment?" Mortimer asked, turning to Sanderson.

"They are, with the exception of the casing setter, which has to undergo some last minute revisions in regard to the electric control. The crown block and the drilling unit are already on the ground, together with the lighter apparatus and steel cable, which arrived from the East last week."

"Fine! Then I hear no objections to starting things at the present stage?"

No dissenting voice was to be heard, so it was then and there decided to start the three drifts simultaneously the following day. With the last few details dis-

posed of, the meeting broke up, and all hurried away to set into motion the machinery of the various departments, each elated that the long months of preliminary work was now over, and that soon the great experiment would be launched.

CHAPTER IV

Success!

● Seven months had sped swiftly by since the meeting in Mortimer's rooms at the hotel. The work at the San Fernando property had been rushed at top speed. Night and day the gigantic super-drill had ripped its way into the earth. Now, at the end of September, it had reached a point seven thousand feet below the head of the well—a total depth of slightly over fourteen thousand feet—far deeper than any drill had hitherto probed in the search for oil. There had been a few accidents to the equipment in the earlier stages of the work, which was to be expected, but these were quickly remedied, and the work hardly ceased for a moment.

On the last day of September, Arthur met his friend Blake by appointment at his office and, in the former's car, they drove out to the scene of operations, arriving in time to descend in the cage with the noon shift. Fifteen minutes brought them to the first tunnel, where they stepped off and walked along the well-lit passage between the narrow gauge rails.

The tunnel, being cut from solid rock, required no bracing. Electric lights set in recesses in the granite walls at intervals shed a bright light in every direction. A hundred feet from the elevator shaft, the tunnel broadened out into a large room, which was almost completely filled with a confusing mass of machinery. In the center, an assemblage of huge steel castings, shafts, sheaves and heavy I-beams which was the crown block, straddled the opening of the cable shaft. Several huge cables of steel wire stretched taut from the sheaves to a row of ponderous steel drums of the main hoist, which were electrically driven through chain reduction gears. After encircling the drums a number of times, the cables passed back through a conduit which was sunk into the floor of the tunnel, to the elevator end, where they passed over a floating drum and were directed downward along a deep notch, or chute, cut into the wall of the main shaft, to where the heavy water ballasted counterweights hung far down in the sump shaft.

Arthur led the way to the service elevator in the cable shaft beneath the crown blocks and, as they slowly descended, pointed out the salient features of the mechanism.

"There are twenty lines through the big block," he said. "Twelve of them handle the traveling block for the drilling unit; four are for the casing setter, and four for the slush pump column."

They passed the huge traveling block and stopped beside the mouth of the well, which was surrounded with a railing. Here, as above, electricity dispelled the gloom; the men moved silently and efficiently about their tasks. They approached the yawning hole and leaned on the rail. A two-inch steel cable hung straight down from the block above till lost in darkness; but a continual vibration along its length told of the tireless work of the insatiable monster at its lower end. Two smaller lines on either side and about a foot apart were slowly coming out of the hole, accompanied by a faint clanking from far below.

"The casing setter is coming up," Arthur volunteered. "We'll see them put on another section of casing and send it down."

They stepped back and watched the preparations. A few feet above them, a heavy crane was securely anchored to a wide shelf cut in the side of the shaft. At its lower end, a massive arm supported a circular notched platform of steel. From either side of this rose two tubular posts, the upper ends telescoping into the lower, and having at the upper extremities a pair of curved jaws. This arrangement was rigidly braced and connected to the central beam of the crane. From the inter-

mediate tunnel, a length of the spiral-rolled casing was lowered till the lower edge rested on the platform between the posts. By hydraulic pressure, the upper portions of the tubes now slid into their bases, bringing the jaws in contact with the upper edge of the casing and holding it rigidly.

From the well mouth now appeared the complicated maze of arms, rollers, eccentrics, and expanding screws which composed the casing setter. Its large, hollow central shaft encircled the huge cable of the drilling unit and slid upward with no interference. Just below the crane it came to a stop. The crane swung outward, the supporting cables passing with nice precision between the gaping edges of the casing, and at a signal, the operator resumed the upward movement of the setter which slid through the casing till flush with the lower edges. Hooked jaws swung out and gripped the bottom edges, the load was raised clear of the platform which with the crane swung clear, and the device began to sink toward the open well with its fresh burden. As it reached the well, guides directed the open lips of the casing around the column of pipe from the fluid pumps, bringing it inside the roll; and in less than five minutes from the time of emergence, it passed again from sight on its downward journey of nearly a mile and a half.

"That's what I particularly wanted you to see, old man," exclaimed Arthur, slapping his friend on the back.

Blake started, with an effort wrenching his mind from the contemplation of the mechanical wonder he had been witnessing, and turned toward Mortimer.

"By George, Art!" he said. "I'll take off my hat to that thing if it works as well below as it did here. Just like threading a needle, only easier."

"It's some plaything, all right," Arthur agreed, "and between you and I, we had many weeks of playing with it before we had it mastered. Now it works like a charm. How would you like to go down with it next trip?"

● At his friend's expression, the young man chuckled.

"Not so keen about it, eh? Well, it's no joy-ride, at that. I did take one trip just after we started. I've seen the work it does, and I'll back it against all comers. But let's be getting along!"

They walked along the lower tunnel between the rows of tank cars, and reached the main shaft just as a load was starting up. The return trip took longer, but they finally emerged from the shaft house and started back toward the city.

"How are the indications for oil?" inquired Blake as they swung into Lankershim Boulevard.

"We have passed up several fairly good streaks of sand;" Arthur replied, "which under ordinary conditions might be made to pay; but we are risking that to go after the bigger pay which Black is so confident of striking if we go deep enough. We are boring through a cap of limestone at present, which he claims will be at least a thousand feet in thickness, and we would not be surprised to get into the productive zone when we drill through it."

"You fellows certainly have some revolutionary ideas and machines. I wonder what effect it will have on the industry?"

"Well, as usual, the old-timers will work against anything new or revolutionary that is offered, though after the course of time and much persuasion, we generally manage to get the device in question tried out—and believe me, if they can't bust it up the first try, you can just bet it's going to stand the gaff. It's a deplorable fact that most drillers go on the old idea, 'what was good enough for father is good enough for me,' and to hell with your new-fangled stuff. Of course, they can't be blamed, in a way. They all hate a mean fishing job, or a breakdown while trying to make a hole in competition with some other outfit."

"Still," said Blake, "you will hardly find any of them driving a horse and buggy to work, or being without a radio or any of the other up-to-date things that go to make life in this day and age more

livable. This is an age of advancement, and those who insist on hanging on to obsolete and archaic ideas and devices are just gumming up the works!"

They soon entered the city, where Arthur had his hands full with traffic, and the conversation languished. Setting Blake down at his office, he drove to the Biltmore. The elder Mortimer had just returned from a trip of inspection among his various properties, and being slightly indisposed, had ordered dinner served in his rooms. He ate but little, however, and as soon as the things were cleared away, stretched himself on his bed and listened to Arthur's report of the progress of the new well. He complained of dizziness, and discussed the feasibility of going away for the month of complete rest which his doctor had ordered.

At a little after nine, the phone in an adjoining room rang.

"See what it is, son. Tell them I don't want to be disturbed unless very urgent."

His eyes followed the boy as he crossed the room, and a moment later heard him answer. He followed the conversation for a few words, but a gust of wind from the open window blew the door closed. The late paper on the table in the center of the room caught his eye, and swinging his feet off the bed, he started toward it. At that moment, however, a sudden spell of dizziness which had bothered him all day recurred, and he barely managed to stumble back to the bed. Things went black for a few seconds, and when he came to his senses, Arthur was just hurrying into the room. Even to his still befuddled senses, the note of excitement in the boy's first words was evident.

"Heavens, Dad!" he exclaimed, "the bottom's busted out of things up in the valley—Johnny Wells, in charge of the shaft house just phoned that they drilled through the cap unexpectedly about fifteen minutes ago, and the gas blew the drilling unit clear out of the hole! I don't understand how we escaped an explosion. Washburn was down with the night shift, and got out with the men past the safety doors, which were closed and may hold till they get to the top of the shaft. He says one man was killed and two hurt, how seriously they don't know as yet. I'm going right out!"

Suddenly he noticed his father's pallor as he struggled to a sitting position, and paused.

"Another spell, old top? You sit tight, and don't try to come. I'll send Edwards in to get you to bed, and as soon as I get the straight of things, I'll phone in and let you know. We'll likely have things under control in an hour or so."

Stopping only to send up his father's secretary, he dashed from the hotel and shot away toward the north in his fast roadster.

CHAPTER V

Unleashed Forces

● The morning of the first of October, 1938, dawned with little to suggest the menace which confronted certain portions of the teeming city of Los Angeles—the dénouement of the drama of the search for oil in the upper Los Angeles river basin. A few miles to the north across the Hollywood hills, however, there was being enacted a hectic scene on and about the property of the Mortimer Drilling Co., in which clanging steam shovels waddled puffing about, frantically attempting to throw up a dyke about those portions of the land which were not already encompassed.

With the advent of daylight, there had become visible to the inhabitants of the surrounding territory a great, two hundred foot high fountain of jet which shot from the spot on which the day before had stood the shaft house of the great well! Already the huge earthen reservoirs were a third full as the lapping waves of black rose perceptibly higher with each passing hour. At nine o'clock, the unprecedented flow of oil was increasing, and the engineers were holding a hasty conference on the top of the levee nearest Lankershim Road. Men of exceptional ability, with records of titanic accomplishments achieved, they yet stood helpless in the face of the problem of stem-

ming the gigantic flow from the shaft, the mouth of which was now beneath the rippling surface of a lake fifteen feet in depth.

At ten o'clock, the county engineer arrived on the scene together with a large force of deputy sheriffs, who proceeded to push back the gathering crowds of curious to a safe distance. The first move that showed the trend of action resulted half an hour later, when six monster shovels deployed at intervals across the now practically dry bed of the adjacent river, a few hundred feet above the trestle of the railroad. As soon as they reached their positions, the shovels ripped into the gravelly stream bed and began to throw up a low dam across the bottoms. Shortly after noon, the first move of the engineers to shut off the gigantic flow began to be enacted at the top of a slight knoll a quarter of a mile west and near the boulevard. The huge machine which had bored the original shaft, and which had been loaded on a car on the near-by siding awaiting shipment, appeared, and in a short time began to gnaw frantically at the earth. A deep cut was made, and by the middle of the afternoon, the machine disappeared from sight in the opening of the tunnel of its own making, which pointed straight toward the distant fountain and at an angle of about fifteen degrees with the surface. The tactics of the fight to control the raging inferno of the burning Getty No. 1 at Santa Fe Springs a decade ago was being brought into play!

Silas Mortimer, still pale and shaky, but rapidly regaining his composure, had put in his appearance at the base of operations. Surrounded by his engineers, he stood watching every move, occasionally letting his gaze wander to the black pillar of oil spouting from the center of the swollen lake before him. Arthur stood near the tunnel, directing the disposition of the various equipment which an army of workmen were quickly assembling on the spot. A car drew up to the side of the adjacent road, and from it advanced the spare figure of Ericson, the secretary of the A.P.I., accompanied by a stranger whom he introduced as Harper, the State Supervisor of Gas and Petroleum, who had just arrived by plane from the north in response to an urgent wire.

"Well, Mortimer, you've gone and raised hell now, haven't you?" Ericson snapped. "Dammit man, what are you going to do about it?"

The man responsible for the situation answered with a gesture—half of annoyance, and half of helplessness. He pointed to the scene of activity.

"You can see what we're doing—the best any one can under the circumstances," he growled.

"But it will take at least two months to reach the hole—then what will happen?"

"Nitroglycerin," was the crisp reply.

"Might work," Ericson grudgingly granted, "but, in the meantime, this stuff will have to flow into the bed of the river, and God knows how long that will hold it at the rate it's going! What do you think the authorities will be doing if it gets farther down the stream?"

"We'll cross that bridge when we come to it, Ericson!"

"Believe me, Mortimer, it's just such pig-headed fools as you who refuse to take the advice of the majority and let well enough alone! You weren't satisfied with what you had—you wanted the earth; and now, by God, you've got it! I hope you will enjoy the results of the mess your damnable obstinacy has got you into. And I hope the industry as a whole will refuse to have any further dealings with you! Come on, Harper!"

As the secretary stormed away toward the road, he was confronted by Arthur, who held out a restraining hand.

"Mr. Ericson," he pleaded, "you cannot know how much this thing hurts me, and how sorry I am that we could not control the unexpected forces. I'm sure that Dad is as remorseful as I am, and we are determined to do everything humanly possible to keep the damage as light as we can. Those who are damaged may look for full reparation to the full extent of our resources; but we need your Coöperation as well as that of all con-

cerned, and I ask you to lay all personal animosity aside and work with us for the common good of all."

The wiry little man bristled, pale with anger as the result of his previous outburst.

"Young man," he snapped, "I hold you as fully responsible as your father. You at least might have exerted your influence in trying to stop his asinine plans, instead of working with him to their furtherence. And while we are speaking, kindly understand that you will no longer be welcome in my home! I shall instruct Marjory to that effect, and command her to have no further dealings with you!"

● He again started toward the car, but Arthur's anger, ill-controlled as the result of a night of nerve-trying labor, flared up.

"Do you think she will consent to such contemptible action, sir?" he shouted. "Do your damnedest, Mr. Ericson, but put this in your pipe and smoke it! I will continue to see Marjory at every opportunity —and let me tell you that your own pigheaded obstinacy in refusing to assist in a reasonable discussion of our problems approaches, if it does not surpass, that of which you accuse my father!"

He swung on his heel and left the secretary, who stood for a moment trembling and inarticulate with rage. Harper took him by the arm and led him to the car, but Arthur did not turn again as they shot away in a cloud of dust in the direction of the city. He stood with head bowed and fists clenched, and had to be warned twice before being induced to step out of the path of a heavy truck-load of machinery.

At a few moments after six in the evening, the dyke nearest the river-bottom burst and an angry flood of oil raced into the stream bed toward the hastily flung barrier above the railway trestle. No attempt had been made to gauge the flow that continued uninterruptedly from the shaft, but that it approached that of the entire daily output of several of the largest oil fields in the state could not be denied. The shovels worked frantically all through the night to reënforce the dam across the bottoms, and at daylight retreated a mile below to start another. The work at the tunnel had swung into full blast, but fast as it proceeded, the engineers despairingly admitted that they could not hope to be ready for the attempt of blasting off the flow till long after the flood should have spread to devastating proportions.

The full import of the disaster did not fall on the population of the great city below until, at the end of a week of frantic, heartbreaking effort, the black flood finally burst the last barrier and raced down the bed of the river which separated the city into two portions. The narrow channel filled half to the brim with the oily stream, twisted through the densely built older section of the city and on through the industrial district of the lower East Side, finally passing into the flood control channel which emptied into the ocean between Long Beach and Los Angeles harbor. In a pitifully short time, the black river was pouring its contaminating flood into the Pacific, polluting the entire harbor district and spreading down the coast to the ruination of the miles of beautiful bathing beaches. After a hasty conference, Mortimer proceeded with the construction of long wooden wings or fences, mounted on floats, which were knocked together in the harbor and towed out on the flanks of the polluting stream, where they were anchored end to end on either side to form a channel which would direct the flow far out to sea. Being lighter than water, the oil readily followed the channel thus formed, and in a measure, the situation at this point was soon well in hand.

Back in the city itself, however, conditions assumed a far graver aspect. The overflow basin along the sides of the river bed had been for years the site of the miles of interlacing yards of the terminal end of the several great transcontinental railroads, and was congested with the older type of warehouse and small business buildings that were rapidly falling into decay and which for the most part

were inhabited by the Mexican population. Further south, as the land flattened into the coastal plains, were the more pretentious plants of the central manufacturing district, and the suburban homes of Vernon, Huntington Park, and Walnut Park. Here the danger was apparently the greatest, owing to the low banks and levees along the river.

Owing to the extreme danger of fire, the authorities closed all but three of the bridges that crossed the river. Those left open were the North Broadway, Spring Street, and the Ninth Street. The police established a deadline a block back on either side of the river, beyond which the curious were forbidden to pass. No loitering was permitted in crossing the bridges, and absolutely no smoking. The worst feature, however, arose through the inability of the railroads to send their trains into the terminal stations. The yards along the river stood idle and freight in the suburban yards grew congested in a few days. Passengers arriving from the east were forced to detrain and cross the crowded bridges to get to their destinations. In a word, a week of the black flood found a city practically paralyzed, business almost at a standstill, and thousands from the suburban districts almost unable to reach the business section owing to the congestion of traffic at the few crossings.

On the fifteenth, the Southern Pacific, Santa Fe, Union Pacific and Pacific Electric railroads started separate actions in the courts against the Mortimer Drilling Co., seeking judgments for damages in excess of five million dollars. The following day, the City of Los Angeles started a similar suit; and before the end of the week, Mortimer's attorneys were beginning to earn their fees in earnest. Their employer was forced to appear before the United States district court to answer charges of polluting the Long Beach and Los Angeles harbors, and interfering with shipping. Harassed on all sides, Mortimer retired to his hotel under the care of a physician, leaving his affairs in the hands of Arthur and his staff of engineers.

CHAPTER VI

The Storm

● The men under Arthur's supervision were striving desperately to drive their tunnel to its goal before the torrential rains in the mountains should swell the streams to flood stage. Though during the dry months of summer and fall, the river, like most others in the West, had practically no water in its course; when the winter clouds off the Pacific tore their veils on the jagged peaks of the Sierra Madres, almost overnight, this innocent appearing arroya of sand and sun-baked gravel assumed the proportions of a raging torrent, snarling at bridges and gnawing at the levees along its lower stretches. And not much time remained. Already several storms in the mountains had sent down a preliminary warning of what would surely follow.

By the middle of November, the tunnel was little more than half completed. Owing to the crumbling nature of the formation encountered, every foot of the way had to be shored with timbers, and owing to the various interfering influences of the authorities and courts, much of Arthur's time had to be given to other phases of the affairs. He was becoming thin and haggard with sleepless nights of toil, and his nerves and temper were raw. Silas Mortimer remained for the most part in seclusion, attended by his doctor and attorneys. He had begun to recover some of his physical well-being, but the daily reports and services of papers from the courts did not tend to produce a peaceful mental condition. Arthur came in several times a week, and his father could plainly see the strain through which he was passing. They said little concerning the boy's fiancé, but the elder man gathered from various remarks inadvertently dropped now and again that things were somewhat strained. Marjory's loyalty to her own father could not be questioned, though it was evident that she sympathized with Arthur to a great degree. His father urged him to cut loose from all connection with the ill-fated

project and strike out for himself, but this he stoutly refused to do.

"No, Dad," he said. "I did not desert when things were going well, and I won't do it now! There will be time enough to think of my future when the curtain drops on this episode."

At this, his father snorted, but he nevertheless felt a thrill at the evidence of loyalty.

Toward the end of November, a heavy thunderstorm arose, and when it had passed rumbling to the east, there had come to pass that which they had all dreaded and yet ever expected. A jagged bolt from the black clouds above the valley had struck somewhere along the course of the river, and in a few hours, the stream of oil was transformed into one of fire, a wall of leaping flame that cut off all intercourse with the two portions of the city, and which marched on its fiery path to the sea where there already floated millions of barrels of oil. Quickly as the alarm had been given, many were the narrow escapes on the crowded bridges. The older wooden structures, among them the double bridge over the channel on the Long Beach Boulevard, were quickly destroyed in a flash of flame.

Only the precautionary measures of the authorities, who had anticipated such a calamity, prevented a wider spread of the flames which immediately threatened the districts bordering the river. For twenty-four hours, the entire resources of the fire department labored stubbornly to keep the flames within limits; but not, however, before the plant of the Los Angeles Gas and Electric Co., on Aliso Street, had gone up in flames. By a miracle, the huge containers a block away did not explode. A boiling cloud of greasy black smoke billowed ceaselessly upward along the course of the river, driving back with every shift of the wind the thousands who had gathered to watch. A great pall hung over a city disrupted in all its vital arteries of communication; lights, gas and telephone services; paralyzed by the inability of the railroads to operate through the stricken zone. A ghastly light flickered through upon the distracted activities of the surging populace.

During the height of the excitement, Silas Mortimer succeeded in slipping unobserved from a back entry of the hotel into a waiting car with closed curtains and, with Arthur driving, passed through devious roundabout ways till they emerged upon a high bluff in Elysian Park, which overlooked the flaming river. To their left, the blazing stream was visible almost to its source; while to the right, its course could be dimly traced as it wound southward through the haze of smoke which covered the city. The heights on either hand were crowded with spectators, but they did not alight from the car for fear of recognition. It was near evening, and presently a brisk breeze sprang up from the ocean and forced the rolling cloud of smoke back, disclosing below them the blackened structure of the Broadway bridge. Farther on, the smoking ruins of the burned district were to be seen.

"The water has risen since that last storm," Arthur spoke up, after watching the scene in gloomy silence for a while. "We're fighting for all we're worth to beat the flood, but things have certainly been discouraging. We have only a few hundred more yards to go, but any day may bring a big storm. Just think what will happen if the river rises enough to pour that burning oil out into the city!"

"It doesn't very often get that high, does it?" asked Mortimer.

"No; but it won't need nearly as much of a rise with the channel already half-full of oil. It's raising hell down around the harbor, too! The floats are practically all burned, and they are having a hard time keeping the fire away from the shipping. It is spreading wherever there is any scum afloat, and that's pretty much all over. I'm afraid that some of the old wooden docks are going to go up in smoke, to say nothing of some of the shipping. Well, we can't do any good here. I'll take you back and run on out to the works."

● The flaming headlines across the sheet of a late extra in the hands of a newsboy in the crowd caught his eye as they backed into the road.

RIVER A BLAZING INFERNO—
MOB SEEKS OIL MAN!

—

MORTIMER'S LIFE THREATENED

—

GOVERNOR MOBILIZES NATIONAL GUARD

The elder man's cheeks paled, and he nervously pulled the shade at his side tighter. They reached the hotel again without mishap, and Arthur went up with him.

"Better stick close, Dad, till this blows over. The police are throwing a line about the hotel, and I don't believe there will be any real effort to harm you. But don't show yourself!"

He dashed away to resume his vigil at at the tunnel mouth.

Several days passed. The undercurrent of resentment against the financier grew hourly, and there were constant clashes between the police and small mobs which gathered near the hotel. The presence of the militia also somewhat dampened their ardor and Mortimer began to think that things would be safe to venture out within a few days. Then came the storm!

All day the skies had been overcast. Toward evening a light rain started to fall, which by midnight had increased to a steady downpour. When the sun struggled through above the clouds and smoke the following morning, the streets were running ankle deep. All day and the following night the steady fall from the skies continued. Arthur, coming in, reported a dangerous rise in the water along the river. He also held out a glimmer of hope in that the tunnel was almost completed. That night they would start planting the explosive with which they hoped to snuff out the black fountain in the San Fernando Valley. But it was a desperate race with time, and the odds were against them.

CHAPTER VII

A Warning Heeded

● Morning came, a feeble slackening of the intense gloom which suffocated the city. The river was by now dangerously near flood stage. But a few feet remained ere it would leave its banks and pour a swollen current of fire throughout the lower portions of the city. By noon, a mass of ominously silent people had filled Pershing Square, across from the hotel, and all efforts of the police and militia to disperse them failed utterly. Angry mutterings reached Mortimer where he paced behind drawn shades in his rooms. Occasionally he would peer furtively through a crack, and each time he did so, his nervousness increased. The management at length requested that he leave the hotel before damage was done, and reluctantly he gave orders to have a car ready at a private entrance, and began to pack a few bags.

Arthur had not been in, but phoned about one o'clock that the explosive would be ready to set off in another two hours. Mortimer explained the move he was contemplating and, getting in touch with his friend Blake, Arthur arranged for his father to be taken to the home in the Palos Verdes hills till better quarters could be safely provided.

"I'll have to stay here and watch things," he ended, "but as soon as we have it under control, I'll run down and see you. Be careful, though. I don't like the attitude of some of this mob!"

Mortimer sent down for his chauffeur to take his bags to the car. His secretary was already gone, settling his account at the desk. Presently, a rap on the door promised the arrival of his man after the baggage.

"Come in," he snapped, not turning from a scrutiny of the milling mass of humanity across the street. "Take the stuff on the bed, and I'll be down as soon as Edwards comes."

It was not till the door closed and the sound of the key turning in the lock reached his ears that he swung around in

alarm. The man who stood on the other side of the room with an automatic in hand was a stranger to him!

"What do you want?" he faltered, paling.

The fellow did not answer, but advanced menacingly across the room. As he approached, Mortimer with growing alarm noted the feverish light of insanity that glowed from bloodshot eyes. He retreated a few steps, and backed into a chair. Thrown off his balance, he sat down heavily, his heart pounding in his throat. The stranger stood over him gloatingly.

"Who am I?" he croaked. "What difference does that make to you? I've got you where I want you. Sit still!" as Mortimer attempted to rise. "And don't raise any fuss. I'll get you before they can help you; I'm going to get you anyway, but first we'll have a nice little chat, eh?"

He seated himself on the edge of a table nearby, and dangled the pistol between his knees. Mortimer swallowed painfully and licked dry lips from which the blood had drained. He attempted to speak, but the effort resulted in a croak.

"Well, Mr. Silas Mortimer!" resumed his caller, "you and I have a little account to settle! You want to know who I am, I suppose? I'm a man you ruined with your bloody oil. You killed my brother, as you have killed a lot of others by your cursed money-grubbing methods! And when I'm through with you, I'm going to kill you, too! You're going to see it coming, and you're going to get down on those fat knees of yours and pray, and it's not going to do you any good. And after I get you, I'm going out after that son of yours, who helped you do it all!"

"He—he didn't! He had nothing to do with it!"

"He did—don't tell me he didn't!" cried the demented man, excitedly waving his gun. "Now get down and pray, damn you!" he said, advancing toward the cowering man.

Under the menace of the threatening gun, Mortimer slid to the floor and assumed a kneeling position, desperately watching for a chance of escape from the now chuckling maniac. Perhaps his success so far had made the visitor overconfident; he approached and stood over his intended victim, and as Mortimer watched furtively, appeared for a moment off his guard. The financier flung himself forward, twining his arms around the legs of his tormentor, and together they reeled backward to the floor, the pistol flying halfway across the room. And now it was a hand to hand encounter as they each fought to reach the gun or inflict a disabling blow on the other, the maniac snarling and snapping with a strength of madness, and Mortimer fighting with all the desperation of a man condemned. But from the first, it was evident that he was no match for the younger man, weakened as he was from his recent illness, and softened by the years of easy living. The maniac was now astride him and clutching for his throat. Mortimer heard someone pounding on the door, but before he could cry out, the talonlike fingers of his adversary closed in a relentless grip about his throat, and the call for help died away into a gurgle as he slowly lost consciousness.

Slowly he began to have knowledge of activity about him. He was very tired, and his throat was sore. He lay for a time with eyes closed, while events slowly began to adjust themselves in his mind. At length he opened them.

● He was in his bed in the hotel room, and sitting on the foot of it was Arthur. The doctor was putting on his topcoat, presumably on the point of leaving. It was dark outside, as a glance at the open window showed him. He must have remained unconscious the entire afternoon! He wondered what had happened, and if they had caught the fellow who had choked him. He raised a hand to his throat, and the movement caught the doctor's eye.

"Hello! He's coming around."

He set down his bag again and advanced to the bed.

"How do you feel, Mortimer?" he asked.

"Sort of rocky yet. Did you get him?" he essayed to croak.

"Get who, Dad?" asked Arthur.

"Why, the nut who tried to finish me in the other room awhile ago."

Arthur shot a glance at the physician, who smiled and answered, "Just a remainder of the delirium. He'll be quite fit in the morning."

Mortimer managed to raise himself on his elbow, and found that he was very weak.

"But I tell you that fellow nearly finished me! You didn't let him get away, did you? He said he was going to get Arthur when he had killed me, and he choked me unconscious. See, my throat still hurts where he had me. I—I thought sure I was a goner! What in hell are you fellows standing there grinning about, anyway?"

"Why, Dad, someone has been with you every moment since you got sick. No one has been choking you! Now you just rest, and we'll see to things."

"Sick?" asked Mortimer. "How long?"

"Nearly two weeks," answered his son. "You've been out of your head most of the time. It must have been in your delirium that you saw this fellow you are talking about."

"Beats me!" exclaimed the financier, dropping back onto his pillow. "But how about the—the blowout at the shaft. Have you got it under control yet? You were going to set off the blast the evening—the evening—when was it now?" he scowled as he tried to make things fit together.

Arthur leaned back and released a loud guffaw.

"You certainly must have had the willies, Dad! Things have never been out of control a moment! We have been closed down the last few days on account of repairs to the drilling unit, but otherwise things are perfectly all right. What sort of a wild hop dream have you been having, anyway?"

When Mortimer had told them all that he had thought was happening—and he could not even now separate the truth from hallucination—he was quite exhausted, and the doctor ordered him to remain quiet until the following day.

"Just one thing before you go, son," he called to Arthur as they prepared to leave him. "Don't start operations till I give the word again. Good night. We'll talk in the morning."

● The next day found Mortimer greatly improved after a night of refreshing sleep, and free from the load under which he had been struggling all during his delirium. When Arthur had seated himself by the bed, his mind was made up as to his course of action.

"Son," he burst out, after a long silence. "I'm going to give it up! I mean the dream of going down to where Black wants to go." He held up his hand as Arthur started to protest. "I'm through out there. If you had been through what I have, seeing it as absolutely real and experiencing the agony and worry and suffering, you would be sick of the whole thing! I only thank God it was not true! Perhaps it has been a warning. I don't know; but I do know that if it was, I am going to heed it! I can pocket the loss, and after all we have gained a lot of valuable knowledge. Who knows that we may not be ahead in the long run?"

"Well, Dad, if that's the way you feel about it, I can't say I'm sorry. It's been immensely interesting as an engineering problem and all that; but you may remember that I questioned the ethics of the thing in the face of the wishes of the others. It's really your intention to pull out and leave it?"

"So much so that you may call Washburn right now and tell him to suspend all operations, and to have the bunch up here this afternoon for final instructions."

Arthur rose.

"All right, Dad, but do you mind if I put in a call for myself first? There's someone else who will be happy to get the news, you know."

"By all means, son! And be sure to give her my love!"

THE END

(Illustration by Marchioni)

For the beast stood before me. It was a Thing of such proportions that only the word gigantic can describe it.

HOUSE OF MONSTROSITIES

By EDSEL NEWTON

● **Our readers have made us realize that they appreciate an occasional good story of gruesome horror. WONDER STORIES is a science-fiction magazine of variety, and a story of this type is not out of place now and then.**

With living, searing scenes, we are shown unholy terrors, such as would make the popular conceptions of the ferocious demons of mythology look like purring kittens in comparison.

Those of you who like to be generously horrified once in a while will find this vivid tale a masterpiece. Let us give you this warning, however; do not read this story after nightfall if you have a weak heart.

● A Sharp-eyed Japanese houseman ushered me into the presence of Stancliffe Podge. Before my conscious mind seemed to grasp anything unusual about the situation, I was possessed by a strange sense of fear. The house was not arranged in anything like the conventional manner that characterizes the more expensive homes in Pasadena. The door of the hallway opened into a long, narrow passageway that lead to the rear of the building. When the silent and expressionless houseman locked the front door, a strange sense of the unusual struck me. I do not know why this should have been true. I knew that Podge had turned his house into a menagerie and that he was engaged in surgical experiments, but I had no reason to be credulous of anything quite so revolting and dangerous as his work proved to be.

Podge was waiting for me in the library. His beard had grown since he had arrived from Singapore. His face was full and dignified. He seemed poised and his voice was well modulated when he expressed his pleasure in seeing me again.

"I receive few visitors," he went on to say.

Suddenly, he was interrupted by the scream of a wild animal—I don't know just what kind of a beast. In response to my questioning look, he explained hastily, "I've begun the most complicated of my research work. Some of the animals are restless. They seem to sense what is coming."

Months of curiosity welled up in my mind. I began asking questions. While I waited for his answers, I again pictured those thirty caged beasts that the ship had left at San Pedro after a rough trip from Singapore.

"I shall attempt to produce a new, or rather altered form of animal—a composite," he said calmly. He saw the astonishment on my face and laughed. "Your attitude is that of millions, were they told, but you must not publish it in your newspaper, Roister. Wait until I succeed. I will make many mistakes, but I think I shall succeed."

I could not help admiring this man of science whom I had previously looked upon as a mere fancier of animals. He conveyed the impression of being a man who had seen the world from points of vantage, at last to set himself down to a given task, to slightly alter something, somewhere in the scheme of things. Every scientist is born to that.

"It is the pursuit of the unusual, Roister," he went on. "And I may be wrong —all wrong. A scientist with money can be a menace to society."

He went on talking faster than I could have taken it down in shorthand. He went on to explain that he had discovered a perfect method of weaving animal tissues together—knitting nerves and connecting blood vessels, arteries, and veins, until he could take two animals of different species

and graft them together—scientific stuff that even surgeons don't know much about. He said he could take a horse and a cow and graft half of one to half of the other. You can imagine what a shudder that gave me.

He had a great incubating device, too. The machine-like thing was revealed to us as we walked down the hallway. He told me about the things he had done with it.

"From cell life—the minute cell—I have been able to incubate a low form of animal life. By using a collection of cells from different animals, I have literally grown—well, beasts. You'll see them later. Hard work!—I took chemicals as a base and tried to produce the cells, but that didn't work. Then I began grafting the beasts I produced in the incubator to some of the ones I brought from the jungle. No? Wait and see!"

I had been listening with astonishment written all over my face, I suppose, and I thought Podge was mad. I had smiled, for some reason or other, and he didn't like that. He was then determined to show me what he had done. But first of all, he insisted that I was not to publish anything. I lost a good story, but I saw his laboratory and the several slimy composites he had produced. They were shapeless, grotesque things that caused me to shudder and revolt, animals that he had literally built up.

His laboratory was an addition to the main building, a room a hundred feet square. It was equipped with every conceivable electrical and chemical device. There were shelves of instruments. The room was tiled and spotless. It failed to impress me after seeing those wriggling composites. True, they were still in the incubating stage, but they gave me a feeling so weird and wild that I wanted to bolt and run. Podge seemed anxious for me to leave, a fact which I sensed as we finished the inspection of the laboratory. I started out through the door before him, but happened to glance over my shoulder. And then I saw something that kind of made me doubt his sanity and my own. The great Bengal tiger that I had seen unloaded from the S. S. Meridian a few months before was being wheeled into the room, bound to an operating table. It was still as if it had been put under an anesthetic. Podge hurried back into the room, leaving me to find my way to the front door. The houseman let me out and I drove back to the office feeling as if everything in the universe had always been just a little bit crazy.

The Hybrid Horrors

During the following months, I found no excuse to visit Stancliffe Podge. Banks were robbed, murders were committed, criminals were caught and jailed, divorces ground through the mill, movie stars created sensations, ships sank—everything happened but the unusual. Months went into years.

But it always happens. Every once in a while something turns up in the news to startle even newspapermen.

This time it was the horrid murder of two young girls, Nina and May Munson. They had gone a few blocks from home at night, never to return. It happened near the arroyo in Pasadena. So positively without motive, so cold-blooded and brutal was this double crime that it shocked the country. When their mother was told of it, she collapsed and died.

There is no necessity of my describing a bloody scene. But it serves the purpose of this story to say that the bodies of these two unfortunate children were torn to shreds. The sight that met my eyes in the morgue was ghastly, and it aroused in me, as well as in everyone else, a kind of fury that will stop at nothing. Policemen became vigilant and hard. They stopped traffic and questioned everyone. Thousands of people joined in the search for the murderer and as many theories of the tragedy were advanced by these people. We published the story, advancing no theory, commenting upon the mystery of the gruesome murder. One must admit that a killer who tears the bodies of his victims into shreds and leaves no trace of his identity furnishes exciting news.

Midafternoon of the first day found

no new developments. I had been searching the scene of the tragedy, at last to give up hope of finding a clue. The crime had taken place at the side of a dark street. Blood was strewn upon the shrubbery, yet no one had heard the screams of these two innocent children. No one had seen anyone in the vicinity who might have been suspected, either before or after the hour when they were found dead.

While going over the ground, it suddenly dawned upon me that Stancliffe Podge's managerie-home was located near there. I went to see him, for no good reason. I had certainly not connected him with the crime in any way. I suppose I went there to relax my mind from the harrowing experience of the past few hours.

Podge was pleased that I had called and he was so enthusiastic about his work that he at once entered into a detailed account of his results. I forgot to mention the murder, or perhaps I took it for granted that he had heard about it. He said that he had proved that the evolution of animals could be changed abruptly, and that was a startling statement. I was doubly anxious to see the results of his work. He lead the way into the laboratory.

"You've succeeded in producing a hybrid?" I asked. "What sort of an animal—?"

"Twenty of them," he answered quickly. "Let's see the incubator."

I don't like to tell about things such as I saw in the incubator. They were slimy, nameless things, inactive, deformed. I tried to get away, then and there. But Podge sensed it and went on ahead of me until he stopped before a glass case.

"Here is something more definite," he said, and I looked inside and hated him for what I saw.

"It was queer, that animal. It developed easily, though," Podge mused.

I was looking at a grotesque creature. It had the pointed head of a wolf, the feet of a monkey and the body of a member of the cat family, I would say the lynx. It had patches of hair and fur in turn, and then smooth skin of a dark brown color.

"That would interest a circus crowd, eh?" he asked, beaming.

I agreed that it was astounding and that he could have made a million with it.

"Money doesn't tempt me," he objected. "My motives will not permit me to disclose what I have done, even to the press. I'm showing you these things in order to get an estimate of what I have accomplished from one who has not known the monotony of the hard work involved."

"You've revolutionized surgery and vivisection. This would astound the world," I commented, at a loss for words.

He smiled. "Come along. I'll show you something that will make you think you're on a different planet watching a strain of animal life foreign to human imagination."

He raised the canvas that hung over another case and pointed through the glass to a monstrous thing. It had the head of a sea lion and the claws of a grizzly bear. The body and legs could not have been associated with anything I had ever seen. It stood upright and I could see from its movements that it was lethargic and sluggish and ill of temper. Podge literally lifted me away from where I stood frozen to the spot and pushed me into the main laboratory.

"Some of my subjects have grown to greater proportions than I expected," he said as he opened the door. "I have not been through the laboratory today. We feed them in the afternoon. But congratulate yourself—you're the first person besides myself and my Jap boy to see these."

I looked with a feeling of horror and fright at the things in the several cages and my senses reeled and my soul convulsed and my eyes grew mad and staring. For they were a conglomeration of gigantic beasts, nameless creatures, no two of which were alike—of fleshy mass and splotches of fur; some had fin-like limbs and claws that served the denizens of the upper Cambrian for feet; they had formidable heads and grotesque bodies, and still others uttered the guttural squawks and snarls of what might have been Mio-

cene scavengers. But all of them had piercing, wild, hypnotic eyes with which they looked upon us like blood-thirsty killers of aons long gone when the only law was the law of might and life meant blood and blood meant life. I stood terror-stricken and could only find words to say, "It takes stability of the intestines to live around here."

"Upsets your senses, eh?" he laughed. "Well, that isn't my problem. Food is the greatest necessity. I'm kept busy thinking about it. I buy beef and horses. They're all carnivorous beasts, even those of the gorilla strain. I don't know why, unless it's in the blood. There's one outstanding specimen back here, but *you'll* have to name him."

● I was suddenly possessed with a feeling of suspicion. You likely understand. You've had presentiments that come to you from nowhere, hunches that come from the remote association of one thing with another. In other words, you would have thought of the murder of Nina and May Munson at that moment, had you been in my place.

"Grizzly-bear — gorilla — chimpanzee," Podge went on. "This composite has grown like magic."

I followed him to a canvas-covered cage that was built against the wall. The cage extended half-way to the ceiling and the iron bars were set in concrete at the bottom. As Podge reached to draw back the canvas, he warned, "Stand clear—he's powerful!"

I stepped back and waited.

But there was no use. For the sight that met our eyes stunned us both. There was no animal. There was nothing—nothing but a ragged hole in the main wall of the building that told where brute force had broken through and escaped! It had literally battered down the wall and pushed through to freedom.

Podge was livid white. I again thought of the tragedy of the two young girls and remembered that I had not discussed the hideous affair with him.

"God—Roister," he stammered, "hurry outside and around to the rear! I'll unlock the cage and climb through!"

"I think you're too late," I said, and the world seemed to reel and my heart was gone.

He studied me, speechless, and I continued. "There occurred last night two murders such as could have been committed by only a beast—a blood-thirsty monster such as you describe. They were children, mutilated and torn. It happened within a few blocks of this house."

He was stupefied. I rushed for the door with my car and the police in mind, but as I turned my back, I heard his hoarse command. "Stop!"

I turned.

"You must not let me down now," he pleaded. "It was an accident that he escaped. I'll find him and kill him, but no one must know if I can help it." His face was firm and his tone was steady again. "You will remain here!"

With that, he motioned me back into the room. He went through the door and I heard the key turn in the lock. Then I turned to see those hideous monsters staring at me with their glinting eyes.

I looked about the room for a means of escape, saw nothing but the skylight and the hole in the cage, the door of which was still locked, and then I sat down and waited.

As I sat there and studied that group of monstrosities, I thought of no comparison with them this side of hell. Their gross and various shapes caused a nervous shudder and a feeling of nauseation to fall upon me. One of them alone could have torn me to bits. They were all adapted to slaughter—to kill. They had reverted to many different periods of time, and no two of the hideous things were alike.

They stood five and six feet in height, with brawny limbs and bodies; others lay upon the floor because of inadequate legs, displaying their threatening jaws of teeth, and still others possessed the agility of Bengal tigers, standing there behind their glass enclosures, ready to spring at any living thing and kill—kill!

I directed my attention to the cage from

which the great one had escaped. A floor scale afforded an iron bar with which I broke the lock, intending to escape. The lock broken, I dashed through the door and reached the ragged hole in the wall. I stopped at the hole. I could not have gone through—no one could have gone through and lived to tell of it. My senses were gone. I thought I was crazy and the sensation that possessed me at the moment was more awful and horrid than I ever believed I could bear.

For the beast stood before me. It was a Thing of such proportions that only the word gigantic can describe it. It stood upright, a towering monster, upon massive legs that ended in seven-clawed feet. It had the head of the lion, the sabre teeth of the prehistoric tiger; its arms were as long as its legs and its trunk was great and thick and matted with curly black hair.

The world spun. I stood petrified.

It advanced upon me, spitting a snarl. I was powerless to move. A thousand thoughts whirled through my brain. Then there was darkness. There was only a hope that it would rend me quickly, that I would never awaken to know of its attack or feel my body being torn to shreds.

Yet, I was alive and standing upon my feet, my deeper, inner self taking charge —else I know not the power that sustained and moved me. In a flash, as if impelled by an unseen power, I was through the opening again. Then I gained the door of the cage. I leaped through, not taking time to lock it behind me, and climbed up the bars to the top of the cage. The beast stalked in after me and I watched him from my retreat with that prolonged horror tearing through my soul.

I fainted.

I regained my senses, presently, but I was not the same man. My head felt as if it were being pressed until my skull would crack. My hair was standing straight. I was white and my hands were bloodless. Cold perspiration was running from the pores of my skin.

I looked over the side of the cage I had mounted. The beast ambled into the room, spied me, came closer to the cage and snarled and spat at me. He tried to reach me with a sweep of his claws. His arm fell short by a few feet. Then he leaped from the floor, missed his objective, which was a crossbar in the cage. He fell to the floor, emitting a weird and wild scream, the call of the bloody ages.

He stood erect and watched me.

I fainted again and then came to. My mouth was dry and parched, yet reason possessed me and I felt a certain fascination for the creature before me on the floor.

A Frankenstein Death

● Inbred in that beast was all that was fierce and blood-thirsty. He was a throwback to the wild, wild gruesomeness of æons long ago, when other monsters even more violent and mercilessly cruel in their lust for blood stalked across the earth in an everlasting orgy of killing—killing!

The beast turned and shambled across the floor, his eyes upon the smaller cases. He stood for a moment as if contemplating the equally fierce monsters before him. Then he advanced with a fierce lunge, hurtling himself against the cases and breaking them, tossing pieces of glass and frame into the air. Blood flowed from the veins where the glass cut through his skin. The calls of the animals inside the cases seemed to madden him all the more. He picked them up, one by one, and dashed them against the concrete floor or tore them into bits, limb from limb. Others that he released in his mad fury sprang upon him. He riddled them and tore them from their grasps and dashed them to the floor until there was a sickly mess of blood and gore spread about the laboratory. Then he seemed to tire of his rampage. He went to a spot near the door that opened into the home of Stancliffe Podge and sat down upon his haunches. He appeared to be asleep.

Five of the other monsters were left alive. They watched me. From time to time, they bit at the flesh of those that had been killed by the greater monster. They

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And then from the golden arch of the temple came the old man and in his hands was a lighted torch that smoked and sputtered.

THE MOTH MESSAGE

By LAURENCE MANNING

● Mr. Manning, in line with many of our other authors, has been inspired by our new policy, which calls for *new* ideas, and that is why his work is steadily improving. There has been something radically *new* in all of his stories.

You will be glad to learn that "The Moth Message" is another story in the Stranger Club series, which are receiving as much praise as his famous "Man Who Awoke" stories of 1933.

Colonel Marsh, who is not willing to miss one adventure, is constantly with us and has become an outstanding character in science-fiction during the short time that he has been known to our readers.

A very unique idea is advanced in this yarn—concerning the peculiar markings on the wings of moths. Using the *cerura borealis* as an example, our author points out the fact that the odd patterns may not be there by pure chance, that something deeper may be behind it all.

● At the first touch of the warm weather this spring, I had the most overpowering attack of laziness that I have ever experienced. It comes every summer, regularly, but the cold winter brought it on rather earlier, I suppose. At such times I usually grit my teeth and work along no matter how I feel, but somehow I couldn't stick it out at the office. I tried reading, but found it too soothing and monotonous; I don't go in much for girls and the alternative seemed to be a mild course in drinking. So it happened that I found myself in the taproom of the Stranger Club at eleven o'clock on a Thursday morning ordering the tall and icy.

The place was deserted when I arrived, but I had not finished my first drink when LaBrot came in — a member I barely knew. He was from French Africa—tall, dark, and supple of body—he spoke English with a bare trace of accent. I downed the contents of my glass at once and proposed that we have a drink together. "You name it," said I, "and we'll both drink it." This seemed witty to me at the time—why, I have no idea now. We drank that and discussed another when Seeman slipped through the doors, silent and poker-faced. LaBrot had the brilliant idea of making each new arrival name his drink and the first comers drink it. Seeman, of course, was all for whiskey straight—to one who did not know the man, the suggestion would have seemed as shocking as though put forward by a newly frocked curate—and when Stendahl came in, he proposed Karlsburg beer. By the time the red face and snowy mustache of Colonel Marsh showed in the doorway of the taproom, we were in condition to greet him with shouts and laughter.

"What's it to be, Colonel? The drinks are on you and you must name them!" Our idea had, you see, grown a bit.

The Colonel ordered mint juleps and marched us up to them in squads and insisted that our grasping, raising, and tilting of the glasses lacked true military precision, which he proceeded to drill into us —using up three drinks apiece upon his recruits in so doing.

It was now time for lunch, and sobered by much eating, we spread ourselves about the great lounge, in silence, to do our digestions full justice—for they serve good food at the Stranger Club. Some of the party left, but four of us remained —LaBrot, Seeman, Marsh, and myself. After half an hour had elapsed in quiet, our bodies were relaxed, our minds opened, and our tongues somewhat loosened so that what befell did so naturally

and without exciting wonder at the time.

LaBrot began it all, lying back in an overstuffed armchair and blowing luxurious clouds of cigar smoke vaguely at the ceiling. "Butterflies," he remarked, apropos of nothing at all, "are my particular hobby."

Colonel Marsh grunted, Seeman's yellowed face remained immobile, and I shifted vexedly in my seat. What *I* wanted was a good rattling yarn, not butterflies.

"Butterflies," continued LaBrot, "are veree interesting and little understood. The patterns on their wings are like nothing else in nature—for there is no regularity about it at all. The two wings are identical in reverse, of course, but that is all."

He lapsed into silence and I hoped that he had fallen asleep, but presently he continued.

"In North America you have a number of wing-patterns not found elsewhere. The Jasmine Sphinx Moth, what you call *Chlaenogramma,* has an elaborate form of shading and outlines; the *Cerura borealis,* one of the puss moths, has peculiar dark markings on its wings. It is not remarkable for an insect to be strangely marked —tigers are and so are guinea-pigs. But did you know that every *Cerura borealis* in the country—millions probably—have exactly the same markings?"

"Eh," I ejaculated, vaguely interested. "Is that true?"

"Perfectly true, my friend," said LaBrot. "It is peculiar, is it not?"

"Yes, rather. You'd think there would be minor changes."

"Oh, there are. About as much difference between one specimen and another as there would be between two copies of a word in two different handwritings. You could see the difference, but the word would still be recognizable."

"Queer way to put it, LaBrot," said Seeman quietly, his keen glance fixed on his face. "Meanin' just what?"

"Ah-h! You are veree quick to see things, but no? Meaning, perhaps they *could* be! For another strange thing, century after century, generation after generation of moths, the children of one species are like copies of their parents and the markings are like the same word in a still different handwriting!"

Seeman sat bolt upright in his chair and carefully lit a cigarette, which he puffed slowly and all the while his eyes never left LaBrot's face. LaBrot continued to address the ceiling, as though he did not see any of us.

"Now if that word were written on paper, it would be gone in a few hundred years, is it not so? If it were engraved on stone—even in the dry air of Egypt—it would last only a few thousand years before the weather wore the markings down.

"Suppose the word were written in the marks of a butterfly's wing—how long would it last? Every year a fresh copy is fathered by the old—the weather destroys the old copy and the young one remains intact. Moreover, the word spreads and is multiplied until millions of that particular kind of moth carry the word over many miles of land. Time may permit the word to cover whole continents—but time cannot erase the word so written! You are now interested, my Seeman, but yes!"

"Can't see what you're drivin' at yet—go on!"

"Heredity is strange—nothing seems so permanent as a useless heritage," continued LaBrot. "We still possess a vermiform appendix. Now I must ask you how many years have elapsed since this was useful to us? Originally a second stomach, it is said. We have been men maybe a million years, is it not so, and since we have been men we have not used this heritage! How long, then, might marks remain in a butterfly wing?"

"Why not tell us the whole story—if it is one?" I put in abruptly and LaBrot was silent at once. Then Colonel Marsh signaled an attendant with his forefinger and presently we were sipping liqueurs *(Crème de Cacao,* to be precise) and the strong sweet stuff set LaBrot's tongue free.

"I am attached to the French consulate

here, as you may know. Last summer I spent my vacation in southwestern Colorado collecting butterflies and enjoying the wild life. I caught several specimens of a new species—no, not even that—a variation of an American species. It has peculiar markings that look like writing and—well, here it is . . . ." He fished into a pocket and produced a flat leather case which he handed around to us. It contained a mounted moth—light yellow with orange rims and on the light portions were strange wriggling marks in jet black.

"It's a Sphinx moth—*Chlaenogramma LaBrotti*, I call it, though it is still unknown to science. You see, the extraordinary part of the whole thing is that a month ago I had these marks here *translated!*"

"Good God!" said Colonel Marsh and stared pop-eyed at the thing as though it would bite him.

"Go on!" said Seeman.

"The writing of the ancient Phoenicians is extraordinarily like that moth wing. I didn't know it, of course. What I did—being struck with their peculiarity—was to copy freehand on a piece of paper the marks in the order they appear. I took my paper to an archaeologist I happen to know slightly. A week later he sent it back with this note: 'It is a crude representation of some Phoenician inscription, apparently, though one of the words is meaningless and several of the characters are so distorted that their meaning almost had to be guessed at. Where did you get it?'

"That's what he wrote me—that and the translation. Of course, it may all be gibberish or pure coincidence but—well, read it!"

● Typewritten on the sheet of paper that he handed me were the following words:

" . . . , (The children of) the Sun (are) . . . . place (of) hills (at or near) the source of the Water (or river) . . . ." There followed a translation into Phoenician characters and the three of us compared these carefully with the marks on the insect. The similarity was extraordinary — indeed, it was plain that they were so nearly identical as to make coincidence the only explanation. And as for coincidence—what is it someone said? If a thousand monkeys played with typewriter keys for a thousand years, what chance would they have of happening to strike out all the words in the Encyclopaedia Britannica? Eager-eyed, we turned to LaBrot for more details.

"Nothing more to say. Only I shall take my vacation next week—we get a month at the consulate — and I shall be going back to Colorado. I thought, if you don't think this all silly nonsense, perhaps one or more of you might care to—"

"H-r-rmph!" The Colonel exploded. "Silly nonsense! Your vacation starts tomorrow, sir, and all *three* of us are going with you—make no mistake! This can't wait!"

LaBrot smiled. "There's one thing more, maybe of interest. The country where I caught this moth is rough and barren. One section of it is raised up on cliffs a thousand to two thousand feet high above the surrounding land. Up above must be twenty square miles where human feet have never touched!"

"Nobody bothered to climb up?"

"No, no! You don't understand! Many have tried, but it is not climbable. I walked all around at the foot of these cliffs, walked and rode, and I traveled twenty miles and came back where I started and at no place was there the slightest crack or slope—all was vertical and impassable."

"Haven't they any aeroplanes in Colorado?"

"Ah, yes! They have flown over it. I found a pilot at Denver, an amateur, who had flown above and looked down upon it. He told me that steep hills and rock pinnacles are everywhere and there is no flat place to land—not even one hundred yards. Many trees grow in the little valleys and gullies — trees are everywhere except where the rough rocks show."

Colonel Marsh was poring over the translation. "You think that this plateau

might be what is called 'place of hills'? How about this business of the source of a river?"

I laughed shortly. "What rivers would you like? The Colorado, the Rio Grande, and the Missouri, herself, all start in Colorado!"

"That is right," agreed LaBrot. Then, turning to Seeman, "You say nothing. Why were you so interested when I began telling?"

"Sort of legend in Africa—one of the tribes, at least. All about butterflies being messengers, y'know. Supposed to carry messages between the spirits or something like that—I never really got the hang of it."

"Ah, yes! I had never heard that."

"But LaBrot," I put in. "What would ancient Phoenicians have been doing in western America? The continent hadn't been discovered by three or four thousand years!"

"Ah!" he replied, raising his eyebrows and pursing his lips. "That excites, but yes? What indeed?"

"Then I take it," demanded the worthy Colonel, "that you propose to get up on this plateau and see what's there! How shall we get up?"

"Once during the war I saw a blimp make a landing on a mountain side to let off a man. Certainly nothing else could do it—not an aeroplane, at least. Maybe we could rent a blimp?"

"Hr-rmph! Rent one! We'll *buy* one. . . . . get me the phone book . . . . no, boy! Boy, there! Go to the telephone and get me the Badyear Rubber Company!"

LaBrot raised his eyebrows at me. I smiled. "Colonel Marsh is worth a great deal of money—don't worry about it. If he wants to buy a blimp, he'll buy it. I'm tickled to death to have an excuse for a vacation—how about you, Seeman?"

"What artillery d'you suppose we'd better take along?" he asked in reply.

● It was ten days later, as a matter of fact, before we arrived at Newark Airport and saw our newly delivered blimp moored by a rope to a ten-ton truck. It was Colonel Marsh's idea that we should fly all the way out, for the airship had a capacity of 1,500 pounds and could take the four of us and her pilot with ease. Her cruising range was about 500 miles normally, but we packed light kit and could take on a few extra gallons. There was a light breeze blowing and the ship rode a hundred feet up in the air as steadily as a bird soaring. At our signal, she came down to within ten feet of the ground and a rope ladder was thrown over which we seized and pulled upon so that the enclosed gondola was only a high step from the level field. We piled in, helping each other, and two of the Badyear Company's mechanics helped us load the duffel. Then we found our seats in the cramped cabin—two long bunks—and I glanced out the port to see the ground far below. Silently and effortlessly we were rising.

When we had reached a few hundred feet of altitude, the pilot—a long, lean, taciturn fellow—started the engine and I could feel the ship swing to the pull of the propeller and head around due west. Then the motor settled down to a steady deafening roar and we were on our way. The trip was uneventful; we ate and slept on board. We stopped three times for gas and I was amazed at the ease with which each landing was effected. A light-hooked anchor on a rope was lowered until a flying field attendant caught it and hooked it over something solid—once it was a concrete pylon, and once a dozen men held it—then we drew in on the rope until we were almost on the ground. At Denver we stayed several hours and loaded up with grub and filled the ship's tank with fresh drinking water. We were ready.

LaBrot sat up beside the pilot now and pointed out our course carefully on the map. His name was Stevens—a likeable enough chap — and he thought that we were scientists and slightly mad. He was to land us and return to Denver—stay at Denver a week and call for us again. "It's okay with me, boss," said he. "I've got a brother who lives in Denver and I ain't seen him in two years."

Our eyes were now all glued to the portholes and we were fascinated by the wonderful landscape stretched out below us—I never knew that mere rock could be so ornamental — every color of the rainbow, pretty near. And hills and precipices and forests of spruce trees were all thrown in to keep it from getting monotonous. But presently the character of the countryside began to change. More rocks and less greenery and wilder confusion of cliff and gorge appeared. No signs of human habitation were to be seen. For another hour we flew low, skirting mountainsides and roaring down gorges to the screaming disgust of an occasional eagle. Then, when we did sight our goal, we were close upon it—a vertically stratified range of unbroken cliffs that looked like the sawed-off stump of a vast hollowed tree. The hollow was seven miles across and filled with a forest of ancient spruce that rose at us like cyclopean spears, and amongst the green showed brown and gray and reddish rocks and pinnacles.

"This is the place," I heard LaBrot say to Stevens. "Could you land us on the edge of the cliff somewhere, d'you suppose?"

Stevens looked doubtful and juggled the controls so that we lost altitude and the motors were idling. The great upthrust area of timbered wilderness seemed to come closer by the second until we floated only a hundred feet above it. "Stand by to lower the anchor," called Stevens and then, "Let her go . . . . about two hundred feet of line . . . . with a little luck, now . . . ."

And then, miraculously, the ship lurched gently and we were swinging closer and closer to a flat area of perhaps twenty feet width and a hundred feet length at the very top of the cliff. LaBrot was in the open door of the gondola and presently he jumped six feet down to the solid rock. I threw out our equipment, piece by piece, and tricky work it was, for the blimp swung and rose in the light breeze. Then I jumped, myself, at a favorable moment and Colonel Marsh fell on top of me before I could recover, but fortunately neither of us was hurt. It was five minutes before Stevens could get the blimp down again after it had been released from our double weight and then it was just for an instant within eight or ten feet of the rock when Seeman leaped. We caught him or he would have fallen flat. When we looked up again, the blimp was two hundred yards above us, Stevens having abandoned his anchor and line.

He called out, "See you next week!" and waved an arm. We waved back. Then the motor started and he headed up and north and was soon out of sight among the hills. We were on our own. Here on this rocky and broken plateau were almost fifty square miles upon which the foot of modern man had never been set.

"LaBrot! Look there!" called Seeman suddenly and pointed to a small yellowish butterfly that fluttered near. LaBrot peered intently until the thing had gone. Then he turned to us. "I think that was one of our chaps," he said, and turned away to stare down over the country we had come to explore—his cheeks flushed slightly and his eyes sparkling.

We had gained some notion as to the lay of this high land from the airship. Although such a jumble of stone and wooded cliff could be termed nothing but capricious, such plan as there was might be described as follows: first, the encircling cliff-top, varying from one to two thousand feet in height; second, from where we landed, a gorge leading away southwest and forking into two main gorges, which might be termed East and West Gorge; third, a series of smaller branching valleys and gorges on both sides of the main depressions; fourth, a central raised portion, which might have been originally a conical mountain now deeply scarred and cleft by weather and geological action. Our first undertaking was to descend the sharp slope which led to the uneven floor of the main gorge two hundred feet below us. We left our reserve supplies up on the rocky table where we had landed and loaded ourselves with a day's rations and ammunition. Each of us carried a knife and a revolver and a

coil of one hundred feet of strong, light rope.

"We have water, but hadn't we better look for more?" asked Seeman, the veteran camper among us. And we agreed to make this our first search and set off slithering and scrambling down the slope—aided by the half-dozen dwarfed spruces that grew upon it. At the bottom we trudged along between steep cliffs for perhaps a mile over a none-too-smooth surface. At the end of a mile, Colonel Marsh stopped and drew in his breath sharply, eyeing the ground closely.

"Does it occur to you youngsters," he said, "that this canyon bottom is getting to look more and more like a . . . . *path!*"

We hadn't noticed, but it was true — here and there were unmistakable evidences of smoothing. "Couldn't be a water course?" suggested LaBrot.

"It doesn't always run at the lowest level," pointed out Seeman. I felt a chill run up my back all of a sudden and glanced up nervously at the steep slopes that hemmed us in.

We proceeded down the canyon until we came to the great fork of the main gorges and here a careful study of the rocky soil revealed the fact that someone or something had used the path before us frequently. "It could be animals—goats or bears, perhaps," I suggested. "Let's make camp right here before it gets too dark. There's some firewood even if we have to use water from our flasks."

The others agreed and we rolled our blankets close to the canyon wall in a slight depression and built a roaring fire to keep away the beasts that had done the path-beating. Coffee and beans were hot as the strip of sky far overhead became dark and filled with stars. After that we talked and speculated and I remember telling LaBrot:

"So far as I am concerned, this trip is just plain vacation—I'm inclined to think that your butterflies were too liberally treated in the matter of a translation. And even if not, I hardly expect that this particular bit of Colorado is the source of their emanation. Now, considered as a vacation, I think we are having a bully time!"

LaBrot was earnestly indignant—sure we would find something unusual.

"Always investigate the unusual!" Colonel Marsh grunted. "No man ever explored this plateau before, did he? There you are! That was enough for me to go on, back in New York, and it's enough now." Seeman refused to enter the discussion and we finally fell asleep under the stars.

● Have you ever had that sort of nightmare where you lie on your back and can't move legs or arms while a beast or a villain (or whatever) slowly approaches? That's the way I woke up—and I thought I was still dreaming until the ropes cut into my wrists at their striving and I saw in the half-dawn the curious misshapen figures bending over my companions and Colonel Marsh's furious shouting broke the silence of the gorge with wild echoes! The sweat poured suddenly cold over my forehead — what creatures had captured us? Why? I had no time for such imaginings, for a blanket-draped figure approached me and brought me shrieking to my feet with an expert twist on my wrist lashings. Then with a sharp jab in the thigh, he set me walking, and when I turned my head to look back at my companions, I felt a spear point draw blood on my left cheek and kept my face straight ahead after that. About five minutes later I heard behind me the sounds of others walking (we were passing through gravel) and called out: "Are you all right back there?" The painful wound in my buttocks that resulted was only partly compensated for by the threefold response from the rear that assured me my companions were at least in no worse case than I. After that we walked in silence for an hour.

It was broad daylight by now and our path broadened to all of two feet width and we came upon a canyon deeply overhung by cliffs from above. Up this gloomy tunnel we marched, to round a corner suddenly upon a *cul-de-sac'ly* perhaps two

hundred yards across in the form of a circle broken for twenty feet only by the entering canyon. Cliffs partly overhung this open area so that a double handful of sky showed five hundred feet above us. Our eyes, however, did not glance upward—there were more amazing sights to draw them. The entire face of the cliff was the façade of a vast circular building evidently extending into the living rock. It was regularly carved into great square pillars with a massive overhanging pediment and between the pillars, the rock was dressed and pierced with openings for windows and with flat-arched doorways. This sight, in the midst of a wilderness, might be considered bewildering enough. Yet, in addition, there was that which took our breath away; the façade fairly blazed with gold! It was plastered in sheets upon every pillar, and the main doorway, facing us, seemed to have been built entirely of the yellow metal!

There we were in a group, surrounded by our squat and ugly captors (they looked almost humpbacked) and gasping at it all. And then out from the cool gloom of the golden gateway stalked a tall, clean-limbed old man in purple robes that fell to his golden shoes. He looked at us in silence a moment and then clapped his hands. A dark-faced dwarf—like our guards — ran to him dog-like from the shadows, was given a quiet order, and vanished through the gateway. We waited in silence for five minutes until another figure came into the bright sunlight from out of the gold-framed darkness. Then we stared in real earnest!

I don't quite know how to write down what she looked like—the first time we saw Val-Bel. Her hair was a cloud of red-gold and her skin a creamy olive. Her figure was magnificent and stirring to the pulses with its bow-string tautness, and set off with as beautiful a face as I ever expect to see this side of Paradise. She looked straight at us and her eyes became fixed upon (I turned slightly to make sure) no other than LaBrot. He supported the look, like a dazed man, for a full minute. I noticed that the girl's face was tinged with the least touch of pinkness when she finally started and turned to the old man. Two words were said. They saved our lives, as I know now, but we did not at the time. They were followed by a sharp command and our guards herded us promptly at the word off to the left and into a minor doorway and along a dark hallway cut in the stone of the mountains. We tramped on echoing stone for a minute or two and then turned into a large room and — our guards cut our bonds and remained in the doorway!

There we were, you see — prisoners. Colonel Marsh grunted and pulled his mustache through his fingers, eyeing the guards speculatively. The other three of us explored our quarters and found that a dark archway gave entrance to still another room in which were four palette beds upon the floor — straw mattresses, for I felt them. Off that again was a small room in which was sunk a pool of water about six feet square and four feet deep, and with a constant flow entering at one end and going out at the other, over a groove cut in the rocky floor of the room. Rude enough comfort, perhaps, but entirely adequate, except for light, which was furnished by enormously long shafts a foot square and extending, evidently, up to the very top of the cliff in which the caves were excavated.

We went back into our "living-room" and found Colonel Marsh alone, but the butt of a spear showing beyond the archway indicated that a guard was outside.

"And now what?" asked Seeman. We did not reply. After a while, a tray of food was brought in and placed on the floor, the swart squat servitor instantly retiring. There was cold meat and a sort of scone baked in ashes, with sheep's milk (so the Colonel pronounced it) in a leather bottle. We ate in silence in the half gloom of the stone walls, and when we had finished the tray was removed.

"They are feeding us, anyway," I said to the others.

"I suppose you chaps realize that they have left us our revolvers!"

"What! Why, that's right! Took our knives and left the guns on us!"

"Then we can walk out of here whenever we want to!"

"Wait a minute," cut in LaBrot. "What did we come here for? To find out what was here and why, yes? We're being fed —let's wait a few days and see what it's all about."

It was an absurd situation. Yet if we broke for freedom, killing the guards, we might never learn who these people were. We agreed to pretend to be prisoners—but "we mustn't let 'em tie us up again, you know," stipulated Seeman.

And just as we had that matter settled, in walked Val-Bel followed by two awkward fellows carrying wax tapers. Her hair seemed like a third light in the room and she walked proudly looking straight toward us. She beckoned to the guards to set down the candles and in doing so one guard touched her dress—she flared up in a great rage as though she were of different clay from that humble, cringing being —as though a mere touch from him was intolerable smirch. His fellow led him stumbling out of our presence, and her face lost that frightening haughty look as she turned to us once more.

With her hand, she pointed to her breast, said "Val-Bel" and then pointed to LaBrot. He only looked at her as though he had lost his wits. She repeated the action and then he came to himself with a start and gave his own name. In turn she learned all our names. We found that wax-tapers were called *"ge-luce"* and that shoes were *"pod-la."* For an hour she gave us a thorough lesson in her language and signifying that she would return the next day, she left us. A little later we were brought our evening meal, and upon consuming this we retired, feeling unusually sleepy. I know that I was asleep before I had time to fully reflect upon the events of the day—when I awoke I still felt tired and gazed around in a half stupor before I realized that I was dressed in a flowing cotton robe instead of my own clothes! In surprise I rose upon an elbow and peered around in the half gloom at my sleeping companions. Our clothes had been taken away and with them—*our revolvers!*

I roused the others one by one and told them the news.

"We've been drugged!" grunted Colonel Marsh. "Now we're in a fine pickle!"

"What do you suppose they are going to do to us?" asked Seeman.

I feared the worst, but LaBrot seemed unalarmed. "Val-Bel won't let anything happen to us," he said confidently. She came shortly afterwards, and two guards with her to give us our breakfast. She looked interestedly at our new clothes and seemed much pleased with the effect, particularly with LaBrot's appearance. Our language lesson commenced at once and lasted for the entire day.

● For the next two weeks we remained in that semidungeon, unable to determine upon a definite attempt to escape and speculating upon whether our pilot would continue to call week after week for us at the edge of the plateau. We could converse with some freedom in the new language by now, yet had learned absolutely nothing of the inhabitants of the plateau, nor the purpose of our captivity. Val-Bel simply refused to answer any questions and confined her attentions entirely to teaching us words. Every morning she arrived shortly after our breakfast and remained with us for six or seven hours of intensive study. And for the rest of the day and the long evenings we had "ennui," as LaBrot called it—sheer boredom.

One day Val-Bel did let in a little light upon our mystery—she spoke hesitantly, as though afraid to reveal more than a very little. I had framed a sentence in her language: "How is it, Val-Bel, that your people ever got up on this plateau if they cannot now get down again?"

"But when they first came here it was not a plateau," she replied, her eyes wide at the thought. "That was in very ancient days and all around stretched level land, save for these small ravines and bluffs—

or so the books say. The ships sailed right up to the old wharf that was not half a mile distant — up the great river they sailed, and brought new colonists and took away the gold."

"The gold! How did the gold get here?"

She looked more surprised than ever. "From the mines, of course! This colony was the most productive gold mine in all the empire—why else would a colony be set here so many thousands of miles from . . . ."

She started, and her eyes half closed and gazed vacantly over our heads while she appeared to listen. But I could hear no sound—I wondered then and have wondered since whether these people could converse at a distance without words. Certainly she seemed to have received a warning of some sort. "I must not say any more—let us continue with our lesson!"

"But one thing—just one! Surely it cannot be forbidden," pleaded LaBrot.

She looked at him and her face softened. "What is it?"

"How does it happen that the plateau is now half a mile above the plain outside and where has the great river you mention now gone?"

Her brow furrowed and she glanced around uneasily. "Well . . . . I will answer that, for what harm? The books speak of a great earthquake, of the rocks shaking and tumbling. Many of our colonists were killed. Out over the plain as far as they could see, the ground rose and fell rhythmically and sections rose hour after hour until they became distant mountains. The water in the river all ran down into great cracks that opened to receive it in the earth's crust. The sun set on that terrible day and after a night of terror the sun rose on a new countryside—even as we see it now . . . . There! Now we must stop talking and study!"

● Thus the days passed. Each morning we looked forward to Val-Bel's coming. Finally one morning we heard the expected sounds and looked up to see not Val-Bel, but the tall white-bearded figure we had seen on the first day. He gazed at us in silence a moment. Then: "You will follow me!" he commanded and turned on his gold-sandaled heel. Six guards came in and we followed him without waiting to be prodded into it! The sunlight was startlingly bright, even in that deep canyon, after our long stay in the prison, and the air was crisp and clean in our nostrils. We found ourselves led, however, directly toward the enormous golden portal of the main cavern and quickly plunged into its gloomy interior. When our eyes could make out any details at all, we gasped—all four of us. Never in my life have I imagined so much gold! The room was square and measured fully a hundred feet across, while overhead the stone walls curved over to make a pointed arch enormously high and breathlessly beautiful. At the very center, a shaft of light was reflected from the sky above by polished triangles of gold that covered the opening.

We crossed the stone floor and commenced climbing a great staircase cut in the rock. Minute after minute passed and our legs were growing fatigued when we came upon a broad passage from which many arched doors opened. Into the first of these we were led and the old man seated himself beside a large open window through which the sunlight streamed. He beckoned us to seat ourselves on stone benches resting against the wall of the room and the guards retired outside. Then in the language we had spent weeks learning, the old man spoke, and his voice was grave and chilling.

"You will wonder why I have brought you here. That you will learn soon. First I ask you why you came to my plateau. Answer!"

We hesitated as to who should be our spokesman, but LaBrot took it upon himself to answer. "We read the message on the wing of the moth," said he.

The old man inclined his head. "We found that moth upon your clothing."

"We came to learn if you still needed help."

"That is possible—yet must I be sure

that you are qualified to help. Were you sent to us from Atlantis?"

"From *Atlantis!*" (The name was pronounced as in English.)

We looked around at one another. I blurted out: "But Atlantis does not exist! It has not existed for thousands of years —not since human history began, if ever!"

The old man's eyes were hard as they strove to pierce my brain.

"What you say is absurd," he answered coldly. "What purpose can you have in seeking to deceive me?"

"We do not know Atlantis," put in La-Brot. "It has sunk under the ocean."

Our host was visibly growing angry. "It is some attempt to persuade me to yield my guardianship over the gold!" he cried. Then he smiled and said, "We will forget this nonsense. I will tell you why you have been brought here. Listen well.

"You must know that this plateau was left cut off from the surrounding plain many thousands of years ago. Upon it were a dozen men and women of the ruling class of Atlantis, my ancestors, and a few hundred of the working classes. They waited for an expedition to come with my slaves to bear away the gold and so far we still wait in vain. Something must have happened — not the absurd thing you suggest, but more likely," he looked hard at us, "*much* more likely, an enemy has cut Atlantis off from her mines and colonies. No matter, for here we will wait until the gold we guard is sent for.

"Many years passed. They could not get down to the plains below the cliffs, though many slaves were forced to make the attempt. Always they fell and my ancestors saw them die below. So they bred over long, slow centuries of selection a moth that bore their message in its wings and these moths were released by thousands. Yet more centuries passed.

"Whether from some natural weakness in the human strains on this plateau or whether from the mere number of inbred generations, I know not, but our workers degenerated with the centuries and our rulers brought forth fewer and fewer children. This is now so serious that of the line of rulers there remain only myself and my daughter. The workers—they are the deformed dwarfs you have seen! I have permitted none of them to breed — for many years the newly born have been monsters or imbeciles, which I destroyed. The race must die out. That is a small matter, for they are only workers. But my daughter is of the race of the sun. When four young men arrive upon our plateau, you can easily imagine to what purpose I shall devote you!

"From you four she must select a mate; this she shall do today."

"But—the other three?"

He raised white bushy eyebrows. "They are of no use to me," he said coldly.

"And what will you do with us, then?"

"You will be destroyed, for you are not of the working class to be of use, and no man who has seen the gold can be permitted to leave these mines—even if he could."

"Hr-r-rumph!" exploded the Colonel, red of face, "we *came* here, did we not?"

"I know how you came—for the great flying boat that brought you was here again a few days since looking for you. We had no such things in my day—we scorned material comfort and progress in Atlantis, considering that only the mind was worthy of development. I am not curious as to how your flying boat is constructed, nor am I impressed with its creation. Such mechanical tricks do not bespeak a great race—rather a lazy one."

His face was scornful and Seeman looked quizzically at me.

"Your own race would have left here thousands of years ago if you had had an airship, sir!" Colonel Marsh sputtered. "It's all very well to call names, but how about your own case?"

"This is absurd! What use would it be to take gold to Atlantis if the gold were not needed? If it had been needed, they would have come here! Enough of this nonsense. Val-Bel shall choose here and now which of you she will mate with—then we can dispose of the rest of you!"

He struck a gong at his side and a guard entered. "Your mistress!" commanded the old man and we waited in silence for her to come. It was an awkward situation—which of the four of us would she choose? Only one could live! We looked at each other in veiled side glances—our eyes betraying our private thoughts. Suddenly Seeman laughed, his yellowed face wrinkled and his eyes bitter. In English he spoke to us. "You know, we're actin' like a lot of players on a stage! Let's seize the old man and make him order the guards to stand aside while we walk out of here. We can't get more than killed!"

LaBrot's brow furrowed in thought and his eyes became apologetic. "Please! Not yet! You see—well—I love Val-Bel! I think she loves me, but . . . . how can I find out unless we wait? Besides, I have an idea that will give us all more time. It's this: after she chooses . . . ."

But then it was too late, for through the door came Val-Bel and LaBrot became dumb like a man stricken so. She looked at her father questioningly and then without words nodded and turned to LaBrot, placing her hand gently upon his shoulder.

"I have chosen," she said simply.

And at her words the old man struck the gong again and before we three had time to think what it meant, the room was full of guards and it was too late. I saw LaBrot struggling with two of them — Val-Bel anxiously urging them to be gentle with him; I saw Seeman, his face impassive, marching down the hall without resistance, and Colonel Marsh wordily submitting to overpowering force. Then I permitted myself to be shoved along in the wake of Seeman. Down the stairs we went in the darkness and along a sweating tunnel of stone and through a doorway into a prison similar to our old rooms. Seeman was awaiting me, and after a minute the Colonel was thrust in, panting and blowing, and with three small wounds bleeding in his thigh where the urging spear points had thrust.

"Looks like we're done for this time," he announced gloomily, staring at the guards beyond the doorway.

"Oh, I dunno," answered Seeman. "LaBrot said he had an idea, y'know! We're not dead yet!"

● It was almost pitch dark; just a faint glow of light came from the tunnel, but after an hour or two, our eyes could make out three straw pallets against the wall—our only furniture—and we lay down on these and slept. After a while, some food and drink was brought in under guard and set upon the floor of our chamber. Here in the darkness we ate and slept and ate again, for we knew not how many days or hours — fearfully waiting for what each next minute might bring forth. "In God's name, *why* didn't we break free the first day when we still had our revolvers?" I heard Colonel Marsh groan, and my own thoughts echoed the sentiment.

There followed two days of waiting—never knowing from minute to minute how much longer we had to live. We became quite philosophical toward the last, resigned to our fate and all that sort of thing, and spent much time discussing what we had heard from the old man as to the origin and purpose of this strange unworldly colony of a long-vanished race. Also we wondered how LaBrot was making out in his enforced marriage and for how many weeks our aviator would return for us in the blimp before he gave up hope and (perhaps) organized a searching party—and whether they would find us still alive!

During that dark vigil we pieced together the story of this strange gold-mine colony. Seeman started it by remarking that we had learned very little for the probable cost to ourselves.

"Nonsense!" said Colonel Marsh. "We have the whole story. First exploring parties from the continent of Atlantis set out in ships to find the Gulf of Mexico—find the Mississippi River, probably. They sail up it to its source which in those days, evidently, ran close by this plateau. They land here and discover gold and leave

a colony to mine it and determine its richness. Years later the ship returns with more colonists and picks up a cargo of gold to go back to civilization. Again and again the ships come for gold until the Day of Wrath when Atlantis sinks beneath the sea. Even here in Colorado—thousands of miles away—that cataclysm was felt. Mountains were thrust up and the river vanished. The gold mine and the colony around it were elevated a few thousand feet and cut off from the surrounding country. They attempt to descend the cliff and fail. They spend their time breeding messages on moth wings and—no doubt—other equally fanciful attempts at communication with the outer world during the long centuries. But discipline goes on — gold is still mined and piled up waiting the next ship that is to sail from a sunken civilization up a dry river! It must take a lot to convince these Atlanteans of a fact!"

"It *does* make a story the way you sum it up, Colonel," agreed Seeman.

"And now that we have solved the mystery, how much better off are we?" I put in a trifle bitterly. "Apparently we are to be killed and our knowledge is to die with us, anyway!"

We were all three silent for a time. Then Seeman broke it. "Curious that we three should actually *see* an Atlantean. Do you remember the story that night at the Stranger Club? Why do you suppose we have been picked out for these revelations? And why, having seen and heard, are we selected to die?"

"But LaBrot is free — surely he will think of something to help us!"

"Doubt it!" snapped the Colonel. "You can't depend on a man when he falls in love."

"I don't agree," drawled Seeman. "I think he'll find a way. But if he doesn't, I shan't worry. The only way to act is to be calm and prepared. If we have to die—well—that's that! What good would it do to worry?"

When it came, therefore, we were not three determined men but three fatalists and before we could make up our minds to die resisting, the room was full of guards as before and we were led out through the passages into the sunlight where we blinked strongly and stared stupidly around us. Then we saw the pile of brush and the three stakes and—but there were three guards to each of us and that panic-stricken moment of struggle was quickly over. With our hands lashed behind us, we were marched each to his stake and securely tied there.

"No sign of LaBrot!" said Colonel Marsh significantly.

"Wait awhile—we're not dead yet," replied Seeman.

The brush was being piled around our knees now and my eyes frantically searched the doorways and windows in the shadowed cliff face. Surely LaBrot would at least attempt a rescue! But, except for the nine guards, there was no human being in sight. And then from the golden arch of the temple came the old man and in his hands was a lighted torch that smoked and sputtered. On he came, his pace slow and sedate and his face grave and serene. Now he was but ten steps away and in sick dread I closed my eyes and wondered desperately how painful this death might prove.

● So I only heard the shots—I did not see LaBrot leaning out of the window fifty feet up the cliff until four of the squat guards were writhing in their death agonies upon the ground in front of me. He must have had another revolver ready, for six more shots rang out and only one guard was left and he quickly vanished into the darkness of a near-by archway. Then the old man seemed to get a new grip on himself and strode unfalteringly toward us, torch in hand. I strained my head to catch a glimpse of LaBrot's window—it was empty! Now the old man was lighting the faggots at my feet and they caught slowly and crackled and the smoke swirled up and choked me so that I coughed. It never occurred to me to speak. Somehow I knew that no prayers or pleadings could move my executioner

to a moment's pity. I heard Colonel Marsh groan inarticulately.

Then suddenly LaBrot was there kicking away the blazing sticks and holding off his father-in-law with one hand as he did so. In a moment he had cut the bonds that held my wrists, doing it so hastily that he almost severed the thumb from my left hand at the same time. Spouting blood, I fumbled with my leg fastenings and raced around to free my companions. Free at last, we stood there, the four of us, facing the old white-bearded Atlantean. He gazed at us imperturbably, only his eyes betraying his excitement and anger.

"Kill me!" he demanded quietly. "You have won! The gold is unguarded and I have failed. I cannot continue to live!"

None of us answered him, but just stood staring. Then Val-Bel's voice came from the rear. "Husband—what have you done?"

LaBrot turned and went to her and I watched them talking in whispers, she seeming to be convinced of something against her will. After a while her head drooped in acquiescence and hand in hand the two walked up to the old man, who was trembling now with fatigue.

"He says, father, that you are wrong. Atlantis no longer exists. Let the gold stay here—for it needs no guards since none can climb the surrounding cliffs—and do you come with us in the flying boat out over the world and see for yourself. He says that if you decide to return here, you shall be free to do so and the gold shall be guarded for you—but if you find that he is right, then you shall say what is best to be done and whatever you say he will agree to. To this he pledges his life and his honor."

The old man was silent for a while. "And what of my dead guards?"

"What loss? A degenerate race—doomed to die in this generation!"

"It is absurd! He lies when he says that the great empire of Atlantis is lost and forgotten among men!"

"Then his life is forfeit to you — he swears so!"

"I swear it!" said LaBrot in a low voice.

"Well—well—what else can I do? I am his prisoner; why does he not kill me?"

And I could see then that the argument was won, but the sun seemed to be fading and there was something the matter with my eyes, for the cliff was tilting over us at a fearful angle and my head buzzed. Everything went black and I remembered no more.

When I was again conscious, it was to the drone of the airship. I was lying on a bunk and Seeman kneeled beside me. "There," he said. "Do you feel better?"

"What has happened?"

"You lost too much blood—that cut on your hand, you know. Fainted, that's all. And I'm afraid your thumb is gone. Funny you didn't think to bandage it sooner!"

● Of that amazing voyage with Val-Bel and her old father I cannot write—it would make a story all by itself. The ship was heavy, for besides the extra passengers we carried two hundred pounds of gold—$70,000 at the new price. Every new town we passed over was the signal for exclamations of delight from Val-Bel and for puzzled and suspicious frowns from the old man. At New York Seeman and I left the ship and returned to our occupations, but the other four were planning a series of flights to convince the old Atlantean that the world had changed.

It was almost a month when I heard again from LaBrot. The letter was postmarked from the Canary Islands. Here it is, for it makes as good a conclusion to this yarn as anything I can think of:

* * *

"We have made three cruises over the Atlantic Ocean from here and Val-Bel's father is resigned to the truth at last. The question is, in that case, what to do with the gold back on the plateau? I put it up to him and he seems not to care in the least. He wants none of it, for Val-Bel and I have assured him that he must spend the rest of his days with us. I suggested that some of it be given to you and Seeman, for Colonel Marsh insists that

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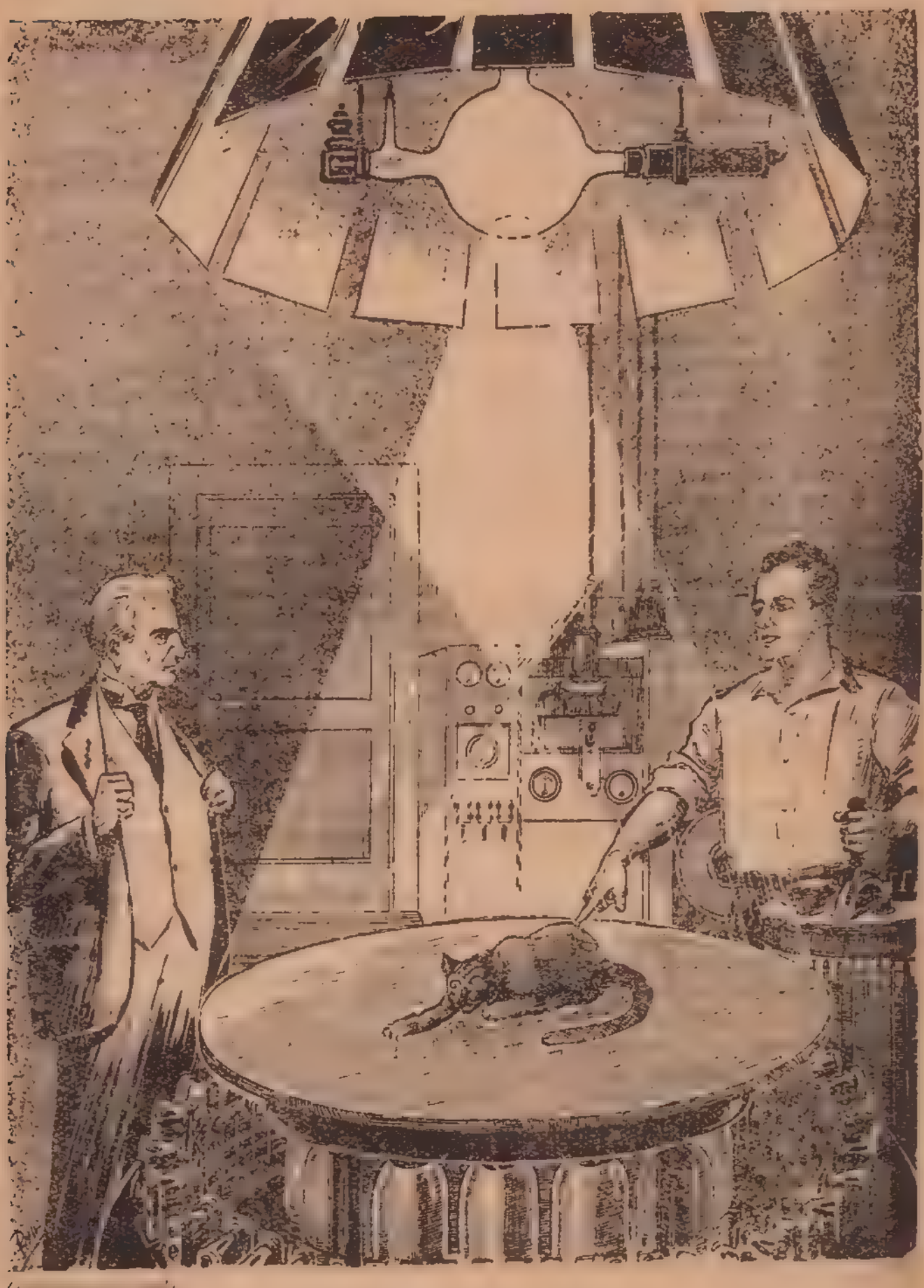

He caused the house cat to disappear mysteriously and reappear again under his deft guidance at the controls.

THE TIME TRAGEDY

By
RAYMOND A. PALMER

● This is the first story we have had from this author in more than four years, and we are sure that you are glad to see his return. We sincerely believe that during the next few years he will become one of the leading science-fiction authors. After reading this short story, you will agree with us that he has a style far from amateurish.

Here we have the time-travel problem tackled from a new angle. Whether the author's purpose is to prove the impossibility of time-travel or not we will leave for your own judgment.

● "Yup, the judge is taking it pretty hard. Y'see, the boy's his only son, and him being missin' this way for more'n a month without no word; well, if you knew as well as I do the way them two has been pals, you'd kinda get the way the judge is taking it." Police Lieutenant McKennedy shifted his plug of tobacco to the other jaw and observed the big feet of the sergeant on the desk before him.

"Funny where he went," came a voice from behind the feet, "just seemed to drop clean out of sight."

"You said it. I ain't never seen anything . . . . dang it, there goes the phone again." McKennedy reached over and yanked the instrument to his chest. "Police headquarters," he barked. "Oh, hello, judge, no word yet . . . . what!"

The sergeant's feet thumped to the floor at the incredulous enunciation of the last word. McKennedy clapped his hand over the mouthpiece.

"My God, sarge, the judge is going nuts . . . . says he's going to commit suicide. Get out the squad and hurry down to his place while I try to stall him."

McKennedy removed his hand from the mouthpiece as the sergeant turned on his heel. "Wait a minute, judge; say that again."

The voice from the receiver sounded clearly in the silence of the office. "I said I'm going to kill myself. I'm going to go insane otherwise."

"Good Lord, judge, don't do that. We'll find the boy soon now . . . ."

"No you won't. He's dead."

"Who told you that? We've no report indicating anything . . . ."

"I tell you he's dead! And I killed him! Now listen, McKennedy; my mind is going and I've got to tell you before I die. I killed him, I tell you, over thirty years ago!"

McKennedy's face paled at the terror shrilling into his ear through the receiver, but his attempt at interruption was vain. There was no stopping the voice. It rang on.

"Don't try to stop me. I've got to tell the story from the beginning. You've got to believe it. This afternoon the photographer delivered the prints of a snapshot I took just before William disappeared. Then the newspapers called asking for some information about the missing boy, and I got out an old scrapbook of family clippings. A similarity between the photo I had just received and an old newsprint picture drew my attention . . . . but I must begin at the beginning or you won't understand." And this is the judge's story:

* * *

In the spring of 1901, two years after I took the bench, my father, Andrew Gregory, was murdered. I remember the night horribly well. Father had gone into the library to secure a book on law to substantiate a point in argument, while I re-

mained seated before the comfortable fire in the living room—you know the situation; the house is the same now as it was then. Suddenly I heard a peculiar whining noise, the noise that a swiftly running dynamo might make, then a crash. Father cried out and I dashed toward the library to investigate, but I was too late. On the floor, blood oozing from a deep wound in his head, was Father, and standing over him in an attitude of stupefaction was a young man, perhaps twenty-five years old. A heavy andiron from the library fireplace was in his hand.

For a moment we faced each other, the young fellow staring at me with what seemed, at the time, an unnaturally horrified air. I tell you, that young man was more terrified at the sight of me than he was of the deed he had just committed.

"You!" he gasped. Then pale as a ghost, but with an astounding alacrity, he leaped from a window and was gone.

Our police department was as efficient as it is now, and before the night was over, he was in a cell.

I went down to see him the next day.

When I appeared at the entrance to his cell, he leaped to his feet, presenting an extremely disheveled countenance to my view—a face that had gone through hell.

"God, no!" he cried, thrusting an arm before his eyes protectingly. "It can't be true!"

"But it is, you scoundrel!" I retorted. "Young man, do you realize that you are a murderer?"

He did not answer, continuing to cower back in that strange terror of me.

"What is your name?" I tried another question.

He turned downright ashen then, dropping his arm from his eyes to stare into mine. "William Gregory," he choked out, as if the words were the hardest he had ever spoken.

I was taken aback. It was something of a shock to learn that his last name was the same as mine, and thus, of course, also that of his victim. I remember how the newspapers played *that* up.

I pursued my questioning. "What was your errand in my house last night? You don't look like a thief."

He ignored my question, continuing to stare at me. I grew uncomfortable under the horror possessing the depths of those black eyes. Then suddenly he burst out, "Tell me," he begged, "tell me, what year is this? They told me it was . . . ." he halted, as if dreading to mention it.

"What year?" I asked in an astounded tone. "Why it's 1901, of course. Are you trying to feign insanity? If you are, you aren't going to get away with it."

● At once he dropped to his cot, a blank look of despair settling upon his face, and he addressed no one in particular. "William Gregory—1901—sentenced to . . . no!" His shout was sudden and determined. "No, I'm not insane. My mind is as clear as yours—a whole lot clearer. As to what I was doing in your house last night, I cannot tell you. You would not believe, nor would it change the course of events were I to tell you. What has been, must be."

From that moment on, McKennedy, I marveled with everyone else at the silence the youth steadfastly maintained. All through the trial we could get nothing from him but an admission of his guilt and the meaningless statement that what had been, must be. The jury found him guilty in what was claimed record time. They were influenced by what the papers decried as "incredible stubbornness and an apparent indifference to his crime."

On May 29, 1901, I sentenced him to hang by the neck until he should be dead —on July 8 the sentence was carried out. I have the clippings before me bearing those fatal dates. Until this day I have had no reason to examine them closely in an effort to refresh my memory, but now they burn in my brain in letters of fire.

But to continue my story in proper sequence, William Gregory, the murderer, became but a dim, hardly remembered memory that finally faded out entirely. In 1908 I married, and in 1909 my son was born. A momentary recollection of

the case flashed into my mind at the news that my wife had selected William as the name for my son, but I dismissed it as unworthy of mention, since she seemed so thoroughly to like the name.

During the years that passed, would to God that I had scanned my scrapbooks, but being modestly inclined, I disliked such egotistical indulgence. If I had, I might have noted the growing resemblance and when the time came, done the one thing that might have changed the future. But I did not, and the scrapbooks gathered dust in the garret.

William progressed finely in school, evidencing a promising engineering ability along with a keen scientific mind. He discussed with friends things far beyond my own mental interests, and finally I abandoned the fond hope that he would become a practical engineer when I perceived that his mind strayed more into theoretical channels. I was quite satisfied that he should be an inventor, and since my own fortune had accumulated to a satisfying degree, I allowed him to develop his life work in his own way, acting merely as the source of supply for materials upon which to vent his genius.

You know his success as well as I do. He did fine work in the development of radio. Television reached a degree of perfection through one of his theories, although he himself did not achieve the final result due to what I sometimes considered his foolishness in immediately publishing his theories, allowing other inventors to keep stride and even to forge ahead of him in actual development. But then, it was his keen insight into the future that told him of the deadlock that would result because of the extreme costliness of practical use.

Thus, early in 1933 he turned to a new theory. He studied Einstein's concepts until he understood them as perfectly, I believe, as even the great mathematician himself. Finally his interest devolved down to one important item. Time, its meaning, and the answer to its riddle, became his one interest.

For long months he worked on his new apparatus, telling no one exactly what he was searching for, nor his purpose, until about five weeks ago. He came to me then with a light of exultance shining in his eyes and his lips brimming with scientific explanations. Time-travelling, he explained, had been his object, and impossible as it seemed to me, he insisted that it was a fact—he had accomplished his objective!

As I gazed at the complicated array of machinery that confronted me in his laboratory above the library, I was suddenly possessed with the certainty that he *had* done something unknowable. The machinery had a veritable aura of untried possibilities emanating from its shining parts. I felt it, too, in his enthusiasm as he explained it all to me. An uncanny feeling of foreboding crept over me, but I shook it off. Complicated as this machine looked, I was sure that it could not offer anything of harm. There were no moving parts; electrical connections were all properly grounded and safety measures provided for any overload of current, which was unlikely, as the apparatus functioned on ordinary house current.

"Have you tried it out?" I asked him when he had finished his description of it.

"No," he replied. "I am going to make several tests that will take me a few more days and then I am going to make a personal sally into time."

Before I left, he made one of the tests, which consisted of a very bewildering manipulation of the house cat—causing her to disappear mysteriously and reappear again under his deft guidance at the controls. Into the future she had gone, William said, and I had no reason to doubt him. The cat took the matter in a calm way and seemed in no wise injured by its uncanny transit. So I left him there, fully satisfied that he was in no danger. Would to God I had smashed the machine to bits!

● During the days that followed, I witnessed several more concluding experiments. Then I was called away on business. When I returned, the household

was in an uproar. William had been abducted! He *must* have been, for he was gone.

But I immediately thought of the time-machine, and commanding the servants to cease their silly rantings, I hurried to the laboratory. I must confess that there was a peculiar sensation of relief in my vitals (imagine feeling relief at the conviction that it was *really* abduction) as I saw that the machine was still there, in cold inoperation. William had said that the machine would disappear when actually used by someone within it, quite necessary for a return, of course. I had no reason to doubt his accuracy in that supposition.

Thus, for more than a month now we have been vainly trying to solve the mystery of his "abduction" with no success until this morning, when it became necessary to retrieve those unfortunate scrapbooks from the garret in search of an item desired by the newspaper.

Having them laid before me, I took an interest in paging through them to kill the inaction of eternally waiting for news that did not come. And then the photographer delivered the proofs of the snapshots I had ordered developed. I stared long at the picture of my missing son, and then laid the photo down upon the open book beside an old newsprint photo. As my eyes compared them, the terrible realization froze my very brain in my head—for the prints, though in different poses, were *identical!* I knew then that William Gregory, the murderer, was William Gregory, my son.

Impossible, you say? No, my dear McKennedy, I have considered it from every possible angle. There can be no mistake, though I have tried desperately to confute my reasoning. As if I had witnessed every action of my son on the day he disappeared, I know that he stepped into the time-machine determined on a trip into the past, perhaps himself choosing 1901 as his goal. Great God! Why did he not realize that the machine would no more travel *with* him than a cannon travels with its projectile? But he did not, and turning the switch was hurled backward in time to 1901, and through some misplacement of space during those years, was precipitated into the library just as my father entered it in search of his law book. What happened then is obvious. Father, discerning an intruder, attacked immediately, actuated by his naturally impetuous nature. William, dazed by his trip and finding himself assaulted by a stranger, grasped the andiron and struck in self-defence.

I have already described what happened after that. It is all too true, and the contemplation of it is driving me mad. To think that I sentenced my own son to death for what was obviously not a criminal action, and to think that he *knew* me, and *knew* his fate, having read my scrapbooks through and through! God! I cannot stand it. What a paradoxical hell this life has become!

I clutched upon a desperate hope about an hour ago. Matter cannot exist in two places at the same time. Thus, I argued, his body could not have been consigned to the grave, to remain there while he was born and grew to manhood with that same body. If this were so, then the whole horrible thing was untrue; but my own family doctor, who is a scientist of no mean repute, assures me that a human being, in the space of seven years, retains no single atom of matter which formerly constituted his makeup, each cell having been individually replaced many times over in the natural processes of the body. Thus the clay that lies in a murderer's grave is not the flesh born of my wife.

I clutched another hope. What then of his body in manhood? Those terrible clippings; they refute with terrorizingly complete logic my every hope! For William's body was *not* buried. It does not lie beneath the soil. It was consigned to the lime-pit to be *absolutely* dissolved!

Continually ringing in my ears is that terrible phrase "What has been, must be." To me this life has become a hell of confusion. Which is past, and which is future? If I had known of the similarity of the two young men, could I have saved him by smashing the machine? God, I do

not know. The doubt is bringing madness.

At first I asked myself, "Why did he not save himself?" but then I realized that it was impossible. How could he make me, or anyone else, believe that I, who was not yet married, was his father? Yes, he knew that he could not save himself. What agonies he must have suffered. It is too terrible to think of. Horror is creeping ever closer. I have the gun in my hand. And, McKennedy, do not hope that anyone will arrive in time to save me, for I anticipated your action, and they will not find me at home! I will not live in madness. Hell cannot be worse than that. Good-bye, McKennedy, and God have mercy on my soul.

* * *

McKennedy staggered back from the phone in horror as the sharp explosion of an automatic rang in his ears. With trembling fingers he replaced the receiver and slumped down at his desk. His awed whisper broke the silence of the room.

"An' I thought he *was* nuts!"

THE END

EDMOND HAMILTON and DAVID H. KELLER, M. D.

—two of the recognized top-notchers in science-fiction for many years are regular contributors to WONDER STORIES, and we take pleasure in announcing five new stories by these leaders to be published in the next few issues. From Edmond Hamilton we have bought

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(Illustration by Winter)

Long streamers of fire crept from the wings to the fuselage. The whole plane seemed bathed in fire.

THE WATERSPOUT

By EUGENE H. SCHEFTLEMAN

● **The Heaviside-Kenelly layer, that peculiar phenomena high above the surface of the earth, has appeared in science-fiction stories many times, but has rarely been discussed and conjectured as much as in the present story.**

Herein is a brand new scientific theory, a logical one, concerning the consistency of the Heaviside layer and other atmospheric peculiarities.

Not only does this story contain plenty of science, but it is lively with adventure in an airplane, a giant Sikorsky, far above the clouds, beyond any height yet reached by man.

We take great pleasure in presenting this story as an example of the type we want under our new policy.

● The wind was blasting a swath of ice across the field as I arrived, and I dove thankfully into the cheery interior of the airport restaurant. I growled my order at the sleepy waiter—I was in no good mood that night. At ten, I had to take out the Chicago mail, and despite wind, snow, ice, and the devil, deposit that mail in Carson City at four in the morning—a six-hour flight over the worst territory on the line, through the worst weather ever seen, and I had to be the goat. I was sore.

The restaurant was almost deserted at that time of night, except for a rather nondescript figure sitting at a table in the corner, surreptitiously watching me. I turned my back on him contemptuously and began demolishing the coffee and toast. I knew, somehow, that he was still staring at me. After a few minutes, it became uncomfortable. I turned around and looked at him again. A pair of piercing black eyes peered at me for an instant, then he swung his head around and began to study a spot on the table-cloth in front of him. That face looked strangely familiar, yet I couldn't place it for a moment—a long, aristocratic nose, great, shaggy eyebrows, and a scar, a red scar from his chin to the middle of his leathery cheek. That scar! I placed him now.

Back in 1931, I had been a co-pilot on a Pan-American line, flying the Miami-Havana run. One night a Sikorsky amphibian had taken off for Miami and never been heard of again. Presumably, they had run into dirty weather, which is plentiful in that area, and been forced down somewhere in the Caribbean. The pilot was one José de Marillo, a Cuban educated and trained in flying in the States—a veteran, if there ever was one. The co-pilot was "Doc" McCoy—as brainy a lad as you ever saw, graduated with honors from a scientific university and flying because he liked it.

Well, we searched and worried, and as time went on and nothing turned up, we gave them up for lost and spent our time inventing theories to quiet the newspapers. The line had received enough bad publicity as it was. A year later, a wing, badly crumpled, but identifiable, was sighted by a steamer near the Arctic Circle; it belonged to the missing ship. That was the finish for the line. Service was discontinued and the company folded up.

Yet here, sitting at a table in the corner of the restaurant, looking like old man depression's twin brother, was José de Marillo!

I glanced at my watch hurriedly. There was still a half hour left before my plane would be on the tarmac. Pushing back my chair, I walked over and sat down at his table. His haunted eyes, staring at me from under those bushy eyebrows, made me feel that I had somehow trespassed.

"Well, Joe," I said uncomfortably, "this is a surprise. Glad to see you."

Seeming not to see my proffered hand, he looked down at the table-cloth again and mumbled something that sounded like "—backbiting friends—".

"Look here, de Marillo," I said angrily, "I don't know what's got into you, but apparently you don't realize your position. A board of inquiry has been trying to locate you for two years. Up till now, we thought your address was 'care Davy Jones' locker, somewhere in the Caribbean Sea.' You'd better—" I stopped, aghast. He was on his feet, literally drooling at the mouth, shaking all over. Incoherent words tumbled from his lips.

"I am innocent—I swear I am! We could do nothing—the gas—the—" He stopped abruptly and sank to my feet.

Well, with the help of the waiter, I carried him into my office next door and laid him on the cot. I poured some of my home-made T.N.T. down his throat and presently, he opened his eyes. With a sigh of relief, I saw a gleam of sanity in them now. His gaunt face broke into a tired smile.

"Sorry, old fellow," he whispered. "Another finger of that liquid dynamite and I'll be all right." I knew right then that he was running a normal temperature again.

After a few tilts at the bottle, he sat up with an effort and spoke.

"How soon are you leaving, Hartwell?"

"In about half an hour, but I've got time to listen to your story, if that's what you mean."

He sat silent for a moment, and then began quietly:

* * *

When I came down to take out the evening ship to Miami, it was with a vague premonition that all was not well (he began). I knew by experience that these "hunches" of mine were usually well-founded, and I felt quite sure that, if I attempted to fly the ship to Miami, disaster would result. But one couldn't take a baseless tale like that to old Carson, the dispatcher. The Sikorsky was loaded, passengers aboard, mail in the baggage compartments, and engines muttering gently, anxious to be off. What could one do? I signed for the ship and climbed aboard.

While checking up, I looked curiously at the passengers. There were ten aboard, the usual crowd of wealthy pleasure-seekers on their way home to the States. All but two were men. There was a plain-looking woman, probably a governess, with a small child, not six years old. Mentally, I gritted my teeth at her—to bring a child on a dangerous voyage like this! But, of course, she could not have known what was ahead. *Madre de Dios!* Had they but known what lay in wait for us!

Later, in the cockpit, I spoke my fears to young McCoy, my co-pilot. Together we attempted to pass them off with laughter, but when he himself admitted a feeling of insecurity, a cloud fell on our merriment.

Nevertheless, we took off on the dot of the half hour, and headed north. The musical droning of the motors and the warm security of the cockpit soon soothed our troubled nerves, and in an hour, we had forgotten the omens of evil. At 9:30, McCoy switched on the receiving set (we carried no transmitter at that time) and got into communication with Miami. He listened for a few moments and his face gradually lost its cheerful smile. Gravely, he turned to me.

"Storm warnings, Joe. A concentrated low-pressure area is building itself around the Key West section and will probably move across our path. Think we ought to turn back?"

For a moment, I was almost tempted to do it. Then I thought of Carson and his vitriolic tongue. "No; we'll take our chances with the weather. After all, we can't let our imaginations dictate to us," I decided.

It was not to be very many minutes before I was to rue this decision sorely.

Soon after this, we ran into a dense fog and rain began to beat against the windshield. So far, the motors had be-

haved like charms, and I decided that our best bet lay in continuing on our route. The sky became darker and darker until I was compelled to fly by instruments alone. It was impossible to see beyond the nose of the ship. McCoy had been looking intently through the sideport. Suddenly, there was an intense flash of lightning and he screamed a warning.

"Look out, Joe! A waterspout—we're heading right for it!"

For a moment, I could see nothing. Then I saw it—a tremendous funnel, almost half a mile in diameter at this altitude, looming out of the fog. In one agonized motion, I strove to rudder the ship to one side, but it was of no use. We struck. There was a blinding flash of lightning, a feeling as of bonds tightening on my chest, and then I knew nothing.

Above the Stratosphere

● (De Marillo paused to take a fortifying sip of the liquor in the bottle.)

Well, the next thing I knew, McCoy was shaking me violently and calling my name. I regained my senses gradually, but seemed to feel no ill effects from my recent unconsciousness. On the contrary, I felt rather exhilarated.

"Where are we?" I gasped.

"Lord knows, Joe," he answered, "but the ship seems to be intact and nobody is hurt back there," jerking his thumb toward the cabin.

I peered through the windshield. Evidently, the storm had passed on, for we were floating through a clear sky, with stars sparkling brilliantly overhead—too brilliantly, I thought, for this part of the world. I shrugged the thought aside. We had more pressing matters to deal with than star-gazing. I sent McCoy back to do what he could for the passengers.

It was then I began to notice some queer things. I have said before that I seemed strangely exhilarated. This feeling increased with the minutes, until I felt positively light-headed. It worried me, because flying a transport over a trackless sea is an occupation which is serious enough for a sober man, let alone a drunken one.

More important at the moment was the strange behavior of the instruments on the dash. The altimeter, which registered four miles at its upper limit, was broken, and the needle was wrapped several times around the check-post. Stranger still, although the top speed of the big Sikorsky was somewhere around 150 miles per hour, the usually reliable airspeed indicator registered 225 m.p.h. I was puzzling over these strange occurrences, when young McCoy returned to the cockpit. I called his attention to the instruments.

"What does it all mean?" I queried. "Here we glide through a seemingly solid sheet of water without so much as a smashed propeller; the ship flies herself while we lay senseless. When we come to, everybody acts like the tail-end of a beer party, although there's not a drop of liquor for miles. The altimeter is the only instrument broken, and our speed, if I am to believe the indicator, is somewhere in the neighborhood of 225 miles per hour."

McCoy sank deeper into his bucket seat and gnawed on a broken fingernail for a while. Finally he looked at me.

"Listen, Joe," he said hesitantly. "I have an idea, but it's going to sound like a bad dream. Brace yourself, and listen. The fact that the altimeter needle is wrapped around the check-post indicates that we are at an altitude higher than the range of the altimeter. Yes, I know what you're going to say—" as I broke in to protest—"you're going to tell me that this ship can't possibly fly higher than four miles. The air is too rarefied. Correct. But suppose the atmosphere up here is dense enough to support the ship—and, incidentally, to support human life?

"You'll tell me that the atmosphere at great altitudes has been proven to be extremely tenuous. All right, but how high have human beings actually been? A mere ten miles or so. Why, even unmanned sounding balloons have only been able to rise about 25 miles. Now, for years, it has been known that a layer or stratum

of some relatively dense substance exists at a distance of approximately 100 miles from the surface of the earth. This stratum, called the Heaviside-Kenelly layer, has been credited with suppressing and reflecting radio waves from the earth, as well as filtering out the actinic rays of the sun, and the deadly "cosmic rays" from outer space. Thousands of theories have been advanced concerning its composition and density, but none have been proven by actual experimental evidence. The theory favored by scientists at the present time is that it consists of some ionized gas, probably air. That is, the gases comprising ordinary air have been ionized, or have had electrons detached from their atoms; these electrons then float freely in the ionized gas.

"I made a rather extensive study of the subject in college, so I know whereof I speak. Some of this may seem muddled to you, Joe, but the way I see it, all the facts point to one conclusion—and I think—"

Most of what he was saying *had* gone over my head, and I was impatient to hear his idea. "All right," I snapped, "don't be dramatic. Let's hear it!"

"Okay. My idea is that we are now flying through the Heaviside layer, somewhere around 100 miles above the earth."

That bombshell, exploding under my chair, as it were, took me unawares. I gasped like a fish out of water and grasped the wheel for support. The ship zoomed like a rocket and I hastily leveled her out.

"A hundred mi — impossible!" I crackled. "Are you out of your head? Must be this damned air. How do you account for the air, Einstein?"

Flushing, he answered, "The air must be a mixture of ordinary air and ionized air, in such proportions as to be suitable for breathing, but too volatile for healthful living. It has been shown that a certain proportion of ionized air in the atmosphere produces increased efficiency in combustion engines. Why shouldn't it produce the same increase in the efficiency of the human body, which is actually a modified combustion engine? The light-headed feeling is probably due to this ionized air, just as divers become 'drunk' when their oxygen supply is increased too rapidly."

Here I interrupted him again, rapidly becoming convinced, despite my awe-struck senses.

"That means increased power output from the motors, and consequently greater speed, so our airspeed indicator might be right after all!" Two hundred and twenty-five miles per hour! I whistled. That was some going, for a great lumbering amphibian.

We sat silent for several minutes. I gazed steadfastly out of the side-port, into the depths below.

"Mac," I said at last, "I hate to believe it, but it looks as though you're right. We can't see the sea and I assume that grey floor far below consists of clouds. But—*por Dios!* Look!"

● Long streamers of fire crept from the wings to the fuselage. Sparks ten feet long snapped and crackled from the wings into space. The whole plane seemed bathed in fire. McCoy, who was doing his trick at the wheel, instantly spun it to the left, and the ship fell off in a side-slip. Using his knowledge of fire prevention in the air, he put the plane through a series of revolutions. Whirling, spinning, and twisting like a thing alive, the ship fell through the air. Suddenly, as quickly as they had appeared, the flames disappeared. Mac leveled out the ship and smiled weakly at me.

"It's all right," he said. "I forgot that the area we are flying through is highly electrified. The friction of the ship against the air induces a positive charge on the wings and tail surfaces. When a high enough charge is accumulated on the ship, a discharge takes place into the negatively charged atmosphere about us. That was what we saw; the discharge is probably harmless, as no appreciable current flows."

I wiped the sweat off my forehead with

a handkerchief. A fire at that altitude could mean only one thing.

"Well, we appear to be blessed with luck tonight," I said, when I could control my voice, "particularly in having the world's foremost guessing-game artist in our midst. Good thing you're here to explain all the tricks, or I'd be all at sea. I suppose the brilliant scientist has only to reach into his derby and pull out the answer to this one: how in Hell are we going to get down in one piece?"

I guess my tone was pretty sarcastic, for he looked hurt. The ordeal we had just been through, combined with what had already happened, had begun to tell on my nerves. More than once, on that nightmare flight, my mind must have been temporarily deranged. However, I realized that quarrelling would only make matters worse. I apologized briefly and the tension between us seemed to relax somewhat.

"Forget what I said, Mac. Must be this confounded gas seeping through my head. Look—I'm a duffer at this scientific game. Let's get our heads together on this and you begin by telling me what you know about the whole thing, beginning with the waterspout." That smoothed the troubled waters.

He almost beamed at me. "Great. Here's my slant. That spout we struck may or may not have been an ordinary waterspout; but the chances are that it was an ascending column of air covered with a thin layer of water. The gradual leakage of air from the Heaviside layer resulted in a change of the natural balance, and more air was 'requisitioned' from the atmosphere below, until the rising air column created the low pressure area and the storm we ran into. The ascending column of air carried with it a thin coating of water from the sea, and it was this sheet we struck. We were knocked out for a while because of the tremendous increase of pressure inside the cone of air. A column of air reaching straight up for a hundred miles, with practically uniform density, exerts considerably greater pressure than that of our own atmosphere, which decreases rapidly in density with altitude. In fact, we were probably saved from being crushed to death only by the sealed cabin and strong construction of the ship!

"Well, we were shot up through the air column to the Heaviside layer, and here we are. So far as I can see, the only way back is straight down. Barring the chance of finding a conveniently downrushing column of air, we'll have to dive when our fuel gives out. The space below us is probably devoid of air for 80 miles or so, and we run the risk of tearing off our wings if we level out the ship too fast. The tremendous centrifugal force would tend to strip the wings from the ship. Also, there is the pleasant possibility that the air in the plane may leak out on the way down and result in suffocation. You may take your choice."

I sat silent for a moment, assimilating these comforting thoughts.

"Well, the ship is probably tight enough to keep in most of the air, for a few minutes, anyway," I argued. "And as for the speed—well, we could level her out in such imperceptible degrees that the centrifugal force would be minimized as much as possible."

"Yes," he said grimly, "but our speed, on reaching the earth, will be somewhere in the neighborhood of 3600 miles per hour. It will take a good flyer to land this crate with her wings still attached, given an initial speed of that order."

As he spoke, I glanced at the chronometer.

"*Carajo!* 11:30!" I cried. "We have been flying for three hours. There can only be enough gas for, at the best, another hour of flying. And then—." Our hearts sank at the thought—a sickening, soundless dive — plummeting straight down for 80 long miles—with death awaiting us on the earth below.

Toward the Pole

● Thoughts rioted through my mind. The passengers crouched in the cabin—the little child—the mother so confidently waiting in Havana for her baby to be

brought to her. As yet, the passengers had no idea where we were. Best not tell them until—no; best not to tell them at all. There was always a slim chance—the hope which never dies flamed right again. I smiled at my young co-pilot and extended my hand. Bravely, he smiled back and gripped it with surprising strength. For half an hour, we cruised in utter silence, except for the muted murmur of the four big Hornet engines.

It was then that the devilish air began to take hold of us. For several hours, we had been breathing the volatile stuff and no bad effects, except for the giddy feeling, had resulted. Strangely, the gas did not seem to bother the respiratory system at all, although this may have been our imaginations. The first untoward manifestation was an increase in the rate of bodily metabolism. We actually began to *live* at a faster rate. I felt a vibrating power within me which I had never known before.

McCoy was looking at me quizzically.

"You feel it too, eh? That air must have a stimulating effect on the minds. Kids you into thinking you're a Hercules. I'll bet that half-pint Spig ambassador back in the cabin could lick the whiskers off John L. Sullivan, in this air."

That made me worry. "You don't think any of them will get troublesome—"

"Well," he produced a foot-long revolver from somewhere in his uniform and twirled the cylinder, "if they do. Long Tom here will put up a swell argument for our side."

I thought it over, but no matter how cocky he might be about it, trouble with panicky passengers was the last thing I wanted now. "Still, it might be a good idea for you to stroll back there and convince them we are our way to Miami," I said. "They must have guessed that there's something wrong by this time."

He thrust the artillery back into the depths of his coat and departed rather unsteadily for the cabin.

I turned to the side-port and meditated on the scene before me. The sky was as black as velvet, lit only in spots by the unwavering brilliant light of the stars. The moon was partly concealed by the port wing and I ruddered slightly in that direction to get a better view. The spectacle was rather disappointing—where I had expected a disc of fiery silver flame, I saw only a cold and desolate globe reflecting the life-rays of its longer-lived parent, the sun. I glanced downward—there was nothing to be seen but a writhing floor of white, marking the upper reaches of the atmosphere.

The sight of the clouds set me to pondering again. There must be some atmospheric connection between the stratosphere and the stratum we were now in. Somewhere, there must be a link—but we had as much chance of finding it as old Carson, back in Havana.

Havana! The thought of the warm, smiling city came as a blow in the face. It brought home forcefully the predicament we were in. Until then, our precarious adventure had seemed unreal, like something out of a dream. Now I was wide awake and fear shot through me. Think! I must think my way out of this. Striving to keep calm, I fixed my gaze on the instrument panel. Idly, I watched the madly gyrating compass. North, South, East, it swung, under the action of countless magnetic currents in the space around us.

And as I stared, a miracle occurred. Whether caused by the ionized gas in my lungs, or by the fear which had me in its grip, I never knew, but my brain suddenly thrilled with a surge of power—I knew instinctively that I possessed the type of mind that could sweep through abstruse problems without a hesitating moment. How, where, when—questions flowed through my head and were answered. It seemed as though years had fallen away and I stood in the prime of my youth—a living monument to the gods of knowledge.

The trick of a deranged mind?—perhaps, but hear what followed.

As though drawn by hypnotic power,

my eyes stared unblinking through the compass—I say through, because that is how it felt. Slowly, an idea began to take form in my head. It was almost as though a voice were prompting me—magnetic lines of force—the huge earth magnet we live on—the atmosphere—*Caramba!* That was probably the secret of the Heaviside layer! I saw it clearly, the forming of the molten mass of the earth into a magnetic sphere millions of years ago—the magnetic lines of force circulating through space from the North to the South Pole, gradually ionizing the atmosphere. Later, counter forces came into play and re-united the air particles almost as fast as they were ionized, until a balance existed between the ionized and unionized air particles. As the earth grew cold, much of the atmosphere seeped out into space, but the belt of air called the Heaviside layer, 100 miles from earth, was held by the constant circulation of the magnetic lines of force through it, forever bound to earth. Even when the unionized atmosphere below began to seep through it into space and a vacuum lay below, it refused to leave the dying planet.

If this theory were true, it was probable that the Heaviside layer followed the contours of the earth's magnetic field. Since a magnetic field enters the magnet at the poles, the ionized stratum evidently converged, at the Poles, with the atmosphere below. There, at the Pole, lay our hope.

But, even as the thought entered my head, a shot echoed hollowly through the ship and McCoy stood panting on the threshold, smoking revolver in hand.

"Joe—Joe—they've gone blinking mad, every one of them! The passengers—it must be the air—they threatened to kill me unless I turned the ship around at once and headed back for Havana. If I hadn't fired a shot into the floor, they've have rushed me!"

Dazedly, I looked up. The stimulant, whatever it was, that had made me a momentary giant, was gone. I was left, if anything, feebler than ever; my brain felt as if it had been drained of energy. Uncomprehending, I stared at the smoke trailing from the muzzle of the revolver.

Bewildered, the boy grasped my shoulder and shook me. "Joe—de Marillo—what is it? What's the matter with you? Can't you hear me?"

Little by little, the full import of his words were impressed upon my mind. As if from vast distance, I heard him shouting at me. I signed with my hand for him to go back to the cabin. "—Hold them for a minute; I'm not feeling right—." Puzzled, he again retreated through the door, obviously reluctant to leave me.

Left to myself, I rapidly recovered my strength. I was just lashing the wheel in order to be free to go to his aid, when another shot resounded through the ship—another, and another, and another. Frantically, I struggled to tie a knot in the recalcitrant cord. Then came a sound which froze my blood—the slamming of the exit-port back in the cabin. Someone had jumped or been flung out of the port into the depths below!

Grimly, I resolved to find out who it was. Giving the wheel a final tug to see that it was secure, I leaped through the door and sped along the narrow passageway to the cabin. There I stopped short. Eight men were grouped around the exit-port. They turned their eyes toward me as I entered. Some instinct told me that these men were on the verge of madness. I had known ground-lubbers to become temporarily insane before, under the stress of an accident in the air, and I knew that it was worse than useless to attempt to argue with men in this condition. I glanced around. Of McCoy there was no sign. I had known in my heart it had been him for whom the exit-port had opened. His still smoking gun lay under a chair and a row of bullet-holes in the floor bore mute testimony to his courage. The co-pilot had died a horrible death rather than shoot any of the passengers. They were his charges. I found time, even during that tense moment, to pay a mental tribute to his sacrifice.

Then the eight of them rushed me. Fists flailing, I managed to floor two of

them, giving me time to back into the narrow passageway. Picking up the little man who Mac had labelled the "Spig Ambassador," I lifted him into the air, then dashed him into the faces of the remainder; then I turned and ran to the cockpit. The door was made of strong dural and I locked it securely. There was a rush of feet outside the door. It shivered under repeated assaults. I heard an incoherent confab, and then they went away. Bathed in cold sweat, I sat and trembled for several moments.

Myself once more, I turned to the instrument panel. If I was to put in action my God-sent plan, it would have to be done quickly. In order to reach the North Pole in the limited time left before the fuel would be consumed, we would have to achieve tremendous speed. The motors had been throttled down for economical cruising until then; I jerked the throttles wide open. The four Hornets roared and the ship nearly tore itself apart. I watched the airspeed indicator. It was climbing like a thermometer suddenly immersed in boiling water. 250—300—350—400 and still it climbed! With the motors ripping like demons and the ship straining forward like a hound held in leash, the quivering needle finally came to rest—at 630 miles per hour!

But I shook my head. In the thirty minutes of flying time that were left, we could cover but a small portion of the distance to the Pole. So far as I was concerned, the game was up; and strangely, I did not seem to care. Nothing mattered, except that I was deadly tired. Nature, kept at bay during the stress of the preceding hours, would no longer be denied. My red-rimmed eyes were half-closed, my head lolled forward on my chest.

But there still remained a chore to be done. At the Pole lay our only possible salvation, and the ship's course had not been corrected to bear toward the North. Whether or not we reached our destination in time, it were better to head for the Pole than cruise aimlessly until the fuel was exhausted. With as little effort as possible, I sighted the North star and swung the ship around. Then I lashed the wheel again and, exhausted, slumped down into the comfortable bucket chair. My last impression, before I dropped off to sleep, was of the second-hand on the chronometer, inexorably circling the painted numerals.

The Descent

● I awoke with a start to find myself staring still at the white disc of the chronometer. But now it seemed changed. How—why, it was daylight! Unbearably brilliant, the sun's rays streamed through the ports. Shielding my eyes, I looked again at the chronometer. The hands stood at 8:20. But it was impossible—long before day arrived, we should have been plunging down through the space beneath us. I pinched my arm; this was not a dream. The droning of the motors outside indicated that all was well. Yet the meters on the dash shouted that all the fuel was gone!

Blessing the Special Providence which seemed to be watching over this flight, I donned a pair of shaded goggles and peered through the side-port at the throbbing engines. Great Hornets they were, each having the theoretical power of 750 horses at sea level and the Lord only knows how much more in the volatile atmosphere. My eyes roved over their sleek black outlines in an effort to unravel the problem. The exhaust pipes glowed cherry-red with the heat of the waste gases—green flame shot out behind them. Green! Something clicked in my mind. I had flown for years, but never remembered seeing green exhaust flames. The usual color is bright red, or yellow, varying with the grade of gasoline used. Somehow, I knew, the solution to the problem of the strange fuel which was activating the motors was bound up in these green flames shooting from the exhaust pipes. Could it be that the ionized air surrounding the ship was acting as a sort of fuel, as well as a supporting agent? It seemed the only possible answer. I marvelled, but was not surprised. The power to be surprised had left me.

But, fatalist though I had become, the possibilities of the discovery were not lost upon me—power unlimited—and free! If I got out of this alive, I would be the richest man on earth. I would control the largest source of economical power in the world. Monarchs would take their orders from me—my slightest wish would be law! I went insane with the thought of it; I played with the idea as a gold-miner plays with the yellow metal after his first "strike." I was madly happy.

In the very midst of my mental revellings, the nearer port motor gave a gasp, coughed apologetically, and died. The sound cut through my head like a knife. I glared at the offending motor and opened wider the throttle of the remaining three. Something was wrong. The tachometers of the three engines still operating indicated a declining speed. In a moment the propeller of the other port engine subsided to idling speed, and I knew that in a few moments we would be forced to dive. During the time I had been asleep, the ship's nose must have dropped, until we were flying on the very floor of the ionized stratum; the percentage of ionized "fuel" air to ordinary air had become so lean that the motors could not operate on it.

Very gradually, the glide began—I had plenty of time to think on the way down. Soon, the tail came up and the glide became a hurtling dive—faster and faster we dropped, until I felt the peculiar, "weightless" sensation experienced in a free fall. Coolly, I wondered how close I had come to the truth in my conjecture about the Poles. We must be within a thousand miles of the North Pole; if I were right, we should strike the atmosphere before many miles were passed. I seemed quite detached about the whole business—as though I were considering the fate of some stranger, instead of my own.

There was complete silence, except for the slight whistling of the tenuous air through which we fell. Looking through the windshield, I thought that I could discern blue water through the revolving grey wall ahead—or below, I should say. I wondered, carelessly, about the passengers—I had heard no sound from them for hours. But the thought soon passed out of my head; I had lost the capacity for worrying.

Then, gradually, I noticed a subtle change in the "feel" of the controls. The air about the ship was becoming more solid. The time had come to level out. If the wings held, all was well; if not—the Polar Sea beneath us would close over the wreck of the plane and its occupants. At the thought, as though a dash of cold water had been thrown in my face, I lost my antipathy. I feared Death! Perspiration stood out in beads on my forehead—my hands, on the wheel, trembled violently. Taking them away for an instant, I lit a cigarette and took fitful drags at it. *Madre de Dios!* Would those wings hold, or would we be precipitated, at frightful speed, into the water below?

● The ship was shrieking through the denser air like a meteor, and the water was perceptibly closer now. I gathered my courage for the final effort and tugged desperately at the wheel. It gave a little and the plane shuddered like a thing alive. I pulled a little harder—the wing bolts squeaked in torture. But we were now not more than six miles above the sea; if I waited another second, it would be too late. With a prayer on my lips, I braced myself and levered the wheel back with all my strength. It came; the floor shot up under me, and the blood drained away from my face, under the tremendous centrifugal force. There came a booming snap from the wingspars overhead and I knew that one or more—perhaps all, had buckled. Then the ship was gliding swiftly down toward the iceberg-dotted sea. Checking the joyous exclamation which rose to my lips, I estimated our height—500 feet. The right wing was held in place by one thin strut and the center-section overhead sagged ominously, but they held while we covered the

(Continued on page 872)

With a sickening crash they fell to the streets of the city below, twisted wrecks of automobiles.

SLEEP SCOURGE

By HENRY J. KOSTKOS

● Though Mr. Kostkos is a new author in our magazine, we feel that this first story is a very good introduction to the readers of WONDER STORIES.

We find here an unnatural but unavoidable cataclysm caused by the super-civilization of the future. We are shown that with marvels yet undreamed of by our modern scientists, the men of the days to come will make blunders—causing great losses.

The most interesting feature of this story is the semi-surprise ending which comes upon the reader quite unexpectedly. The scientific theories in the story are logical, and we feel that, all in all, you will thoroughly enjoy this exciting tale and ask for more material written by Mr. Kostkos.

● Ronald Veecks was driving one of those sleek 1973 model automatic Regals on the upper level of the Eastern Seaboard Viaduct, heading for New York at an even rate of two hundred and fifty miles an hour. He had just left Richmond where his father's company, the Chesapeake Power Corporation, was completing the installation of a huge new cosmic ray electric generating plant.

Marcella, his charming fiancé, bent over to more securely fasten the silver buckle of her dainty pump, when the car suddenly jerked and paused for a split second. The blood rushed into the girl's head as if drawn there by a mighty force and her feet felt rooted to the floorboards. Just as things were beginning to go black before her eyes, she managed to force her head into an upright position in time to see Ronald's body sag forward over the steering wheel, his arms hanging loosely from his body.

Marcella gasped with fright, her alarm subsiding somewhat when the fast-moving car kept the road. Fortunately, Veecks had set the automatic controls.

She shook him. "Ronald, for God's sake, wake up!"

He did not answer; his head and shoulders slid from the wheel and fell heavily against the side of the vehicle. Behind her there was a terrific crash, then another, as two overtaking cars swerved off the lane to hurl themselves into the steel protecting walls. Their rear wheels leaped off the ground as the vehicles arched over the rail, and with a sickening crash fell to the street of the city a hundred feet below. Then another car careened toward her at uncontrollable speed, missing the Regal by a hairbreadth, continuing on down the highway.

Marcella stared with horror in her eyes; the occupants of the wildly speeding automobile had not even seen her car; they were sprawled out or slumped forward in their seats, as unconscious as Ronald Veecks alongside of her!

Marcella drew her lips into a straight line and reached over the body of her fiancé to turn the emergency switch. The car slid to a screeching stop as the powerful brakes took hold. With trembling hands, she lifted Ronald's head and peered into his face. The man's eyes were shut, his lower jaw sagged, his mouth gaped open. She tried to arouse him, but no amount of calling, shaking, or even pinching brought forth the slightest response. She pressed her ear against his chest and listened, hoping that her worst fears were unfounded. With a sob she recoiled from the man. His heart had stopped beating!

A thousand confused ideas flashed through the mind of Marcella Vogel. She thought of rushing out into the middle of the viaduct to scream at the driverless cars that shot madly by, to call over the

radio for an ambulance, to rush him to the hospital herself. In desperation she reached under the dashboard and unhooked the radiophone handset and dialed police headquarters in Richmond. There was no answer. She tried the hospitals, homes of friends, doctors' offices, but not a single individual could she raise, although the ringing signal came through clearly.

There was only one thing left for her to do. She dialed a New York number and was relieved when a familiar voice answered. Breathless from horror and excitement, her words came in a scarcely audible whisper: "This is Marcella, Charles. Ronald and I left Richmond a few minutes ago. We are on the Seaboard Viaduct . . . . I'm all right, Charles, but . . . ." she braved a frightened glance at the motionless body alongside of her. "I don't know what is wrong with Ronald. I can't awaken him. He collapsed, suddenly—it almost got me too—a terrible drag on my body. Oh, Charles . . . . I think he is . . . . his heart has stopped beating. And," she dug her tinted nails into the steel dashboard, "they are all the same way down here. Every car on the highway was out of control . . . . Yes, wrecks, horrible—full of unconscious or dead people. Am I awake, or is it a terrible nightmare?" she sobbed.

"Marcella, please hold yourself together," the man on the other end pleaded, trying hard to keep the agitation out of his own voice. Only two minutes before, he had heard a broadcasting station send out the incredible announcement that a sudden and inexplicable sleep scourge had stricken thousands of people in Richmond. The bulletin was brief and offered no explanation. At once he thought of his two friends there—and now they were caught in the catastrophe.

"Can you get him to the Municipal Hospital at Richmond?"

"I'll try," then with determination, she declared, "Yes, I will drive him there at once."

"Good. I'll fly right down to see him." He paused a moment, then an idea struck him. "Dr. Drake!" he exclaimed, a note of relief dominating his voice. "I'll bring him along. If any one can help Ronald, he can."

● With a determined set of her chin, the girl dragged the inert form of her fiancé from behind the wheel and left him slumped on the seat alongside of her, then spun the car around and headed for the hospital.

The streets below were a shambles; twisted wrecks of automobiles with their unconscious occupants battered and bleeding, men, women and children lying in grotesque positions where they had fallen, flames roaring from the windows of buildings, and above all the screaming of sirens and the clanging of bells, as fire apparatus and ambulances rushed into the stricken areas to battle with the flames and haul away the victims — that is the picture she saw. She was somewhat relieved when she left the outskirts and reached the center of the metropolis to find that the people there were suffering from nothing more serious than terror of the unknown. With some difficulty, she maneuvered the big car through the hysterical crowds that thronged the streets.

She tried not to think about Ronald and how much she really loved him. It was because of her pleading that he had reluctantly consented to take a short rest from the arduous task of supervising the installation of the new power plant. They were to spend a few days together at her father's town home. That would give him a chance to recuperate and she could feel more easy about him. But now, if he was —no! She must not allow that obsession to dominate her. Dr. Drake surely could work his wonders here, as he had done for others so many times before.

Rex Drake was a name that stood for everything new and startling in advanced scientific and medical circles. He was young and handsome too, judging by the television images she had seen when he lectured over the air on his latest theories. It was owing to his researches, so she

had heard Ronald say, that mankind was finally able to harness the unlimited force of cosmic rays.

But Drake was a mysterious personage. His private life was closed to even his most intimate associates. He had the habit of disappearing suddenly without leaving the slightest clue as to his whereabouts. He was fond of flying his bullet-shaped helicopter at reckless speeds above the atmosphere and he would just as likely drop down in the midst of his synthetic food laboratories in Central Africa or his radium mines at Antarctica as at the landing field of bustling London or blasé Paris.

Marcella had hardly reached the confusion of the hospital before an orderly notified her that Brokaw and Dr. Drake had arrived. She rushed into the doctors' rest room where they were awaiting her.

"Where is he, Marcella?" were the first words Charles Brokaw uttered. "Oh, pardon me, I forgot. This is Dr. Drake, Miss Vogel."

The girl took in the well-knit figure of the meticulously dressed man who bowed formally to her. He might have been any age from twenty-five to fifty, yet his deep, dark eyes, with their sharp scrutiny and the wisdom of the ages in them, proclaimed him to be a man who had lived through experiences that would have filled to overflowing a score of ordinary lifetimes. When he spoke, his voice vibrated with hidden power, with deep-rooted culture, yet there was an underlying harsh, cruel note in those tones. Yes, Marcella felt, the man could be entirely ruthless and inexorable when the occasion demanded.

"They carried him into the emergency room with the others. He was so lifeless, so cold." She tried to suppress her sobs.

Rex Drake strode down the hallway into the emergency room. He appeared entirely at home in the hospital and asked no questions of the officious orderlies. Marcella and Brokaw tiptoed after him into the gleaming metal-paneled room, to see an interne and an elderly bespectacled doctor bending over the inert body of Ronald Veecks. Scores of human forms were lying on stretchers and on the floor, all victims of the mysterious scourge, awaiting the attention of the harassed and bewildered physicians and nurses.

"How do you do, doctor?" Rex Drake walked over and began to examine the body. "I'll take care of this case now, thank you."

The house physician eyed the intruder with a frown on his face.

"But you can't. You have no business here . . . ." The old doctor's neck reddened above the collar of his white jacket.

Drake looked right through the man with his deep, dark eyes, and a tone of harshness dominated his voice as he insisted with finality: "You two may leave —now."

● The interne and the house physician almost fell over themselves as they backed away from the body of Veecks, their eyes wide with expressions that appeared so ludicrous to Marcella that, in spite of her anxiety, she could not restrain a ripple of silvery laughter that surged from her throat.

Without another glance at the two gaping doctors, Rex Drake opened the odd-shaped black leather bag that he was carrying and removed a miniature pathological laboratory. As Marcella and Charles watched with shuddery interest, he lifted the body as lightly as if it had been a child's and placed a square sheet of smooth black substance, framed in glass, under the man's back. On Veeck's chest he adjusted an instrument that resembled a binocular microscope, and then, without a word, snapped the switch on a box containing an electrical ray generator.

The effect was startling. Over the chest of the inert man a pale violet light glowed weirdly, surging up and down like an evil living thing, catching on Dr. Drake's face a look of triumph. Then the luminescence became fixed and at the same time more vivid, until it appeared to be transfused into the body of the helpless man on the operating table.

"This is the 'D' ray," Dr. Drake explained to the two onlookers. "Don't be frightened; it is perfectly harmless. Its action is somewhat like X-rays except that I can control the depth of penetration so that the function of any internal organ can be studied just as if the outer tissues and any intervening bones were of the finest transparency. Now I will focus it so that we apparently section the heart to watch its action—if there is any," he muttered as an afterthought.

He peered through the eyepiece and adjusted the pinion screw to focus the instrument, then slowly increased the power of the "D" rays until Ronald's chest was a mass of vivid, pulsating blue. He beckoned to Marcella to look. Reluctantly she approached the flaming body, her golden hair streaming out into a halo of bright green from the high frequency electrical charge.

When her eyes finally accustomed themselves to the instrument, she drew back with a little sob of fright. There, revealed before her, was Ronald Veeck's heart, neatly sectioned through the auricle and ventricle chambers and the valves between them!

Rex began to explain the action in a low-pitched, melodious voice.

"Do you note the feeble fluttering of those thin membranes between the chambers? They are the valves. You see, there is still a circulation of blood, a trickle so minute that the ordinary instruments can not detect it. That is why those two," he indicated with his head in the direction of the doctors who had left, "no doubt thought that your fiancé was dead. But don't be alarmed; there is sufficient heart action and this will revive him."

Marcella and Brokaw had by now become accustomed to the morgue-like aspect of the place and they watched with undivided interest, forgetting for the moment that the subject was a human being, someone dear to them, and not an inanimate test specimen.

Dr. Drake took a long, sharp electrode, and without hesitation, skilfully plunged it into Veeck's vein just above the elbow. Then baring the man's chest, he searched through the instrument for the main artery, the dorsal aorta that led from the heart, and slowly inserted a slender needle until it seemed to the two that its point would come out through the man's back.

● Dr. Drake looked up. "Veecks," he explained, "is suffering from the same strange malady that has paralyzed thousands of others in this city. That we know beyond any doubt. But the nature of his affliction—that is something else. I understand that the physicians here have diagnosed it as epidemic encephalitis, the brain inflammation popularly known as sleeping sickness. Bah—they are more stupid than I had thought possible. A brain inflammation, when there is hardly enough blood left in his brain, in fact in the entire upper part of his body, to keep him alive, is preposterous."

"What?" Brokaw asked. "Then where has his blood gone to?"

"Down into his legs and feet, at least the red corpuscles did."

He quickly adjusted the operating table to elevate the lower part of the patient's body.

"No, this condition is not caused by microörganisms nor by a virus, but is the result of some heretofore unknown agency or force that exerted a tremendous pull on the red blood corpuscles, like gravity intensified a thousand times. As a consequence, the corpuscles were actually attracted away from the brain toward the feet, which accounts for some people succumbing, while others close by, who may have been lying down or in a position with their heads lower than the rest of their bodies, were unaffected."

"Then that's why I didn't lapse into unconsciousness," Marcella exclaimed, "although God knows I was close to it. It was lucky for both Ronald and myself that I bent over to fasten my shoe buckle at that instant."

"Yes, Miss Vogel, but it's more fortunate that the attraction or force didn't drain the blood plasma as well as the corpuscles from the brain, for then you would

need an undertaker, and not a doctor," Drake remarked dryly.

"Will the other victims recover, Rex?" Brokaw hastily cut in to forestall any further satire from Drake. "They are being rushed to hospitals by the thousands. It seems that every other person in the city was stricken."

"I can't tell yet, Charles," Drake shook his head dubiously. "It all depends upon the local doctors and health authorities—how soon they recognize the cause and use the right treatment."

"But, Doctor, who—what fiend could have liberated this force, and what on earth could his motive have been?" the girl asked, looking at the imposing figure before her with wide-open, serious eyes.

"I am a scientist, young lady, not a crystal gazer."

The harshness had crept back into his voice and he deliberately turned his back on the girl to watch the effect of the charge he had been sending into the body. Marcella bit her lip in chagrin to restrain the hot retort that had formed on it. When Drake again faced her, his features were illuminated by a smile of apology that seemed to ask forgiveness for a breach of etiquette committed by a temperamental scientist.

"You see, Miss Vogel, I received numerous radiophone calls before I left New York, from the health department in Richmond and even from the Honorable Richard Dwight, the Federal Health Commissioner, asking the same question. How could I tell them anything when I had not even heard about the catastrophe? It was absurd."

Then turning again to the dormant body, he said: "The heart action is improving; the blood is beginning to circulate more normally. I'll give him a final charge, a heavy one, which should do the trick. Then I'll have to rush over to the health department and keeping doing this thing as long as I can remain on my feet."

He swiftly turned the rheostat until the machine hummed intensively.

"Here goes. Now, Miss Vogel, watch the heart through the instrument."

There was a crackling sound as the high frequency charge surged into Ronald's arteries through the electrodes. The fascinated girl gave a low cry of astonishment as she saw the sluggish ventricles of the heart contract like a squeezed atomizer bulb and shoot the blood out into the arteries in a heavy stream.

Then the heart began to beat at its regular rate! The recumbent man gave a convulsive shiver and opened his eyes. Dr. Drake quickly removed the electrodes and the ray apparatus, then helped his patient to rise to a sitting position. Ronald gingerly pushed an exploring foot toward the floor, then discovering that his limbs had sufficient strength, lowered himself from the table. To all appearances, he had completely recovered from his strange malady!

● Outside on the streets of Richmond there was bedlam. Improvised ambulances sped wildly through the streets; the air was thick with planes taking fleeing people from the terror of the city, rushing medical aid from other regions; hospitals were filled to the overflowing, with bodies stacked in rows in front of them; newsboys rushed about shrieking the scareheads of the afternoon papers.

Rex Drake had already left the hospital, and Marcella, Ronald, and Charles made for their plane to get back to New York, away from this stricken city.

For several days they did not hear from Drake, except indirectly when the radio and newspapers told of his heroic work in treating the thousands who were stricken by the scourge. Night and day he labored, rushing from one hospital to another, to the city hall, schools, libraries and other public and private buildings that had been converted into emergency hospitals to care for the largest number of victims of any disaster in the United States. He built additional electrotherapeutic apparatus, trained doctors and nurses to operate them, and supervised the tremendous task until the last person had either recovered or was found to be be-

yond help. For out of the twenty-five thousand who were stricken, five thousand had succumbed.

But the aftermath of the tragedy brought disturbing news to Ronald Veecks. He had been recuperating from the shock caused by his harrowing experience, at the luxurious town home of the Vogels on West Seventy-second Street, when he received a radiophone call from his father in Richmond. The elder Veecks was president of the Chesapeake Power Corporation, the stock of which was held entirely by his family. The conversation was long and disturbing to both. It had to do with the affairs of the corporation.

When Marcella walked into the room where Ronald was seated before the visionphone, she could not help overhearing him say in a tone of despondency: "But that will take more money than we have—it will wipe us out, Father."

As he hung up the receiver, he slumped back in his chair and dropped his head into his hands. She hurried over and snuggled into his lap.

"What is it, dear; can I help you?" she asked softly.

He patted her hands, then shook his head. "It's nothing but a dizzy spell," he lied, then catching the look in her eyes, he announced desperately: "We are being sued for fifty million dollars by twenty-five thousand people in Richmond—every man, woman and child who was affected by that appalling scourge."

"Oh," Marcella gasped. "Ronald, you can't mean it! Are you sure you . . . ." She pushed back his shoulders and looked anxiously into his eyes.

He essayed a weak smile. "No, my head is screwed on tightly enough, Marcella. I'm not that bad yet, though God knows how long I will be able to say that. Father called." His words came rapidly, bitterly. "It is all the work of that pussyfooting dude, your Dr. Drake . . . ."

"But, Ronald," the girl broke in, "I don't follow you. *My* Dr. Drake? I like that! Stop being a green-eyed monster and explain yourself."

"I'm sorry, dear, the news swept me off my feet. I shouldn't disturb you with this nasty mess." Then catching the hurt look in her eyes, he took a deep breath and launched into an explanation.

"Drake claims to have discovered the cause of the catastrophe. You recall that only in certain sections of the city were there any people affected. He mapped out those areas and found that they coincided exactly with the streets under which we had recently laid a new high tension electrical feeder cable from our cosmic ray electrical generating plant."

She nodded her head, although, so far, the thing did not make much sense.

He spread out a street map of Richmond. "Here are the stricken areas, and here is the route of our cable, twenty miles of it. The day we left Richmond, when it all happened, the engineers were testing the generators and this cable. Now, as you know, the cosmic ray was harnessed only a short time ago and we do not know very much about the nature of it, though I dare say our tall, dark and handsome friend, Dr. Drake, calls it by its first name. I can't pretend to explain the scientific details, and according to Father, neither can anyone else, but something wholly unexpected and dreadful happened during that test."

He paused to light a cigarette to steady his nerves, while the girl fidgeted impatiently on the arm of his chair.

"When they attempted to synchronize the two powerful generators, a weird bluish flame whipped out of the machinery like the tentacles of some unearthly octopus and seared the engineers and mechanics in the power-house into heaps of carbon dust. At the same time, the current or ray jumped the gaps of the oil switches and leaped out over the new underground power line. According to Drake, it was this ray or force that acted upon the corpuscles of the victims with a pull a thousand times more intensive than gravity."

Marcella stared incredulously. "Why was it that other objects were not attracted by it at the same time?" she asked, puzzled.

"I understand that they were. Remember you told me that the car seemed to stop momentarily, just as I lost consciousness? And one of the proofs that Drake offered were photographs showing long mounds of rubbish, dust, and sand distinctly following and marking the route of the underground conductors.

"Now with this evidence, the Chesapeake Power Corporation is held responsible for all damages. This, in spite of the fact that no definite proof of the physiological consequences of such a force can be presented. But we stand indicted in circumstantial evidence. We have no chance of presenting evidence that our machinery could not have generated this deadly force, for they disintegrated the instant the power was turned on." He groaned. "You know, I'm beginning to believe it myself. Oh yes, we are going to fight the case, but you know what public opinion is." He shrugged his shoulders. There was but little hope, he felt.

Subsequent facts bore out Ronald's fears. The case went to court and the jury promptly awarded the twenty-five thousand plaintiffs the huge sum of fifty-five million dollars. The Veecks appealed it, took it to higher courts, and again they lost.

"Give it up, Ronald," Marcella urged sympathetically, looking with concern at the sunken eyes and the hollow cheeks of her fiancé. "The whole thing is not worth it; neither you nor your father can stand this endless court bickering with the weight of public opinion dead set against you."

When the corporation finally settled for the full amount of the claims, the Veecks were penniless. Their immense holdings of power and light companies, their steamship lines, their huge cash reserves, their town and country homes—everything was gone and they faced the world to start anew.

"Just as father did when he began fifty years ago," Ronald laughed bitterly. "We can stand that, all right, but the worst part of the whole mess is that I have to give you up."

She gave a short gasp. "Why, Ronald, what do you mean?"

He spread out his hands in a hopeless gesture. "Marcella, no one on earth, in heaven, nor in hell, can doubt that I love you, love you fiercely, passionately. And for that reason I can not marry you now, or expect to wait forever. I, a penniless pauper, pointed out as the murderer of five thousand people. No," he buried his face in his hand, then whispered gently, "Oh, I want you so much . . . . now . . . ."

Before she could take him into her arms to console him, the butler called from the doorway: "Dr. Rex Drake to see you, Miss Vogel and Mr. Veecks."

"Marcella, I don't want to see him," Ronald threw back his head proudly.

"It will not matter now, Ronald. Why not?" And as he nodded resignedly, she signalled to the butler to show him in.

Dr. Drake appeared much thinner than when Marcella last saw him. His clothing was as immaculate as ever, but it did not drape his body so faultlessly since his frame had acquired a definite stoop during those trying days and nights of the last two months.

Ronald Veecks greeted him curtly.

"I know just how you feel, Mr. Veecks, so I will not ask your forgiveness. It was a nasty mess," he sighed wearily, "and I wished a thousand times over that I had never become involved in it.

"Now, I want to get this over with, for I know that you two would prefer to be here—without me." He paused to take a deep breath. "When the courts took over the properties belonging to you and your father, Mr. Veecks, I ventured to buy in the new power-plant and that section of the underground cable that was the cause of all the trouble."

"Is that why you came here? To taunt me with that thing," Ronald snapped.

Dr. Drake patiently shook his head.

"I came here to give you back the property that rightfully belongs to you."

A bitter laugh escaped from Ronald's lips. "Ask a pauper to run a power-station with wrecked machinery and burnt-out underground cables."

"Listen, Veecks." The harsh note came into Drake's voice, his jaws set grimly. "It is those very 'burnt out cables,' as you express it, that will enable you to have that which you desire above all else in this world," and he glanced at Marcella. "Your cables consisted of twenty miles of number 4-0 copper wire, weighing thirty-four tons. Am I right?"

"About that. Do you want me to sell the fused copper for junk to retrieve the family fortune?"

"No. But you will be able to sell the metal into which the copper was transmuted."

Ronald and Marcella looked wide-eyed at the doctor.

"What the devil do you mean, Drake?" Veecks asked.

● Rex Drake pulled a sheet of paper out of his pocket. "I did some figuring here. The metal into which this mysterious and devastating ray that took five thousand lives and caused you so much mental agony, transmuted your copper, is now worth seventy-one million three hundred thousand dollars!"

Ronald could only gasp feebly: "Wh-what metal—you don't mean . . . ."

"Yes. Gold! Seventy-two tons of it, laid neatly in your underground ducts. You see, the specific gravity of gold is more than twice that of copper, therefore the increased weight.

"Don't ask me how it happened. Neither I nor any one else can answer that, nor be able to duplicate the action that caused it. All that I know is that somehow the cosmic rays bombarded the electric current flowing through the cable, reacted on the atoms in the copper and knocked them into a cocked-hat, and when they rearranged themselves, there was nothing left but pure gold!"

THE END

WHAT IS YOUR SCIENCE KNOWLEDGE?

Test Yourself by This Questionnaire

1. Give a definition of the word "fiction." (See Page 775)
2. Who proved that light has weight and when? (See Page 782)
3. How far about have oil wells been drilled? (See Page 785)
4. What is the approximate diameter of the earth? (See Page 785)
5. What is skelp? (See Page 788)
6. What is commonly called "black gold"? (See Page 790)
7. Name two North American moths. (See Page 810)
8. Of what use to the human body is the vermiform appendix? (See Page 810)
9. Name three important rivers that start in Colorado. (See Page 812)
10. How can you land on the side of a mountain from the air? (See Page 812)
11. Where is the Heaviside-Kenelly layer? (See Page 832)
12. What has this layer been credited with? (See Page 832)
13. What is the Heaviside-Kenelly layer composed of? (See Page 832)
14. What is the effect of a great amount of ionized air in the atmosphere? (See Page 832)
15. What is meant by divers becoming "drunk"? (See Page 832)
16. In what organ are the auricle and ventricle chambers? (See Page 842)
17. What are the valves of the heart? (See Page 842)
18. What is the name of the artery that leads from the heart? (See Page 842)
19. What is the scientific name for sleeping sickness? (See Page 842)
20. How many times does the earth rotate on its axis each year? (See Page 851)
21. Give the divisions of our time system. (See Page 851)
22. Give the divisions of the linear scale. (See Page 851)
23. What is the greatest need for water in the human body? (See Page 851)
24. What is the common interpretation of the word "avocation"? (See Page 854)
25. Which planet is nearest the sun? (See Page 854)

WHAT IS A NEW STORY?

You may have the mistaken impression that all stories are new when they are written. In a very broad sense, they are, but getting down to the plots of the stories, to the basic ideas and themes, they may be antique, covered with cobwebs, metaphorically speaking, and stooping with senility.

A great many of the popular newsstand magazines of action and adventure, detective, love, and western stories actually *demand* hackwork. They outline a rough plot for the authors to follow and the only difference between the work of one author and another is in the style which each uses. This may be, and is, good hackwork in many cases, but nevertheless, it cannot be called original. You might as well read some good classics of the past.

In science-fiction we find the greatest field for original ideas. Nowhere else does literature allow for such diversity and variety. Realizing this, we closed down our policy about a year ago demanding

***new* stories with *new* plots, *new* ideas, *new* development**

Our efforts have met with tremendous success. We advertised the fact in all the writers' magazines. We encouraged the authors to this end — and we have received many new stories that would probably never have been written otherwise. Our regular authors have become so well tamed now that when they write a very good, though hackneyed story, they do not even attempt to submit it to WONDER STORIES — but to one of the other science-fiction magazines, where it has a chance to be accepted. We do not take every *good* story.

This policy satisfies all three factions — the readers, the authors, and the editors. The readers receive material incomparable in originality and refreshing newness — absorbing tales in which you cannot just tell what is coming next. The authors learn to write better and see their stories in print sooner because of the narrow policy which keeps the magazine from becoming overstocked for years in advance. And the Editors have the pleasure of satisfying both the readers and the authors and knowing that they really have the best in science-fiction.

However, we do not take a story if it contains some new ideas but an antique plot, or one with a new plot consisting only of old ideas. New scientific theories provide the path to original stories in science-fiction.

Recently we made an investigation of the other science-fiction magazines, particularly one that recently imitated our request for *new* plots. We found, though many of their stories contained fairly newly developed ideas which helped them from becoming boring, in part, the plots in most of them were decidedly ancient.

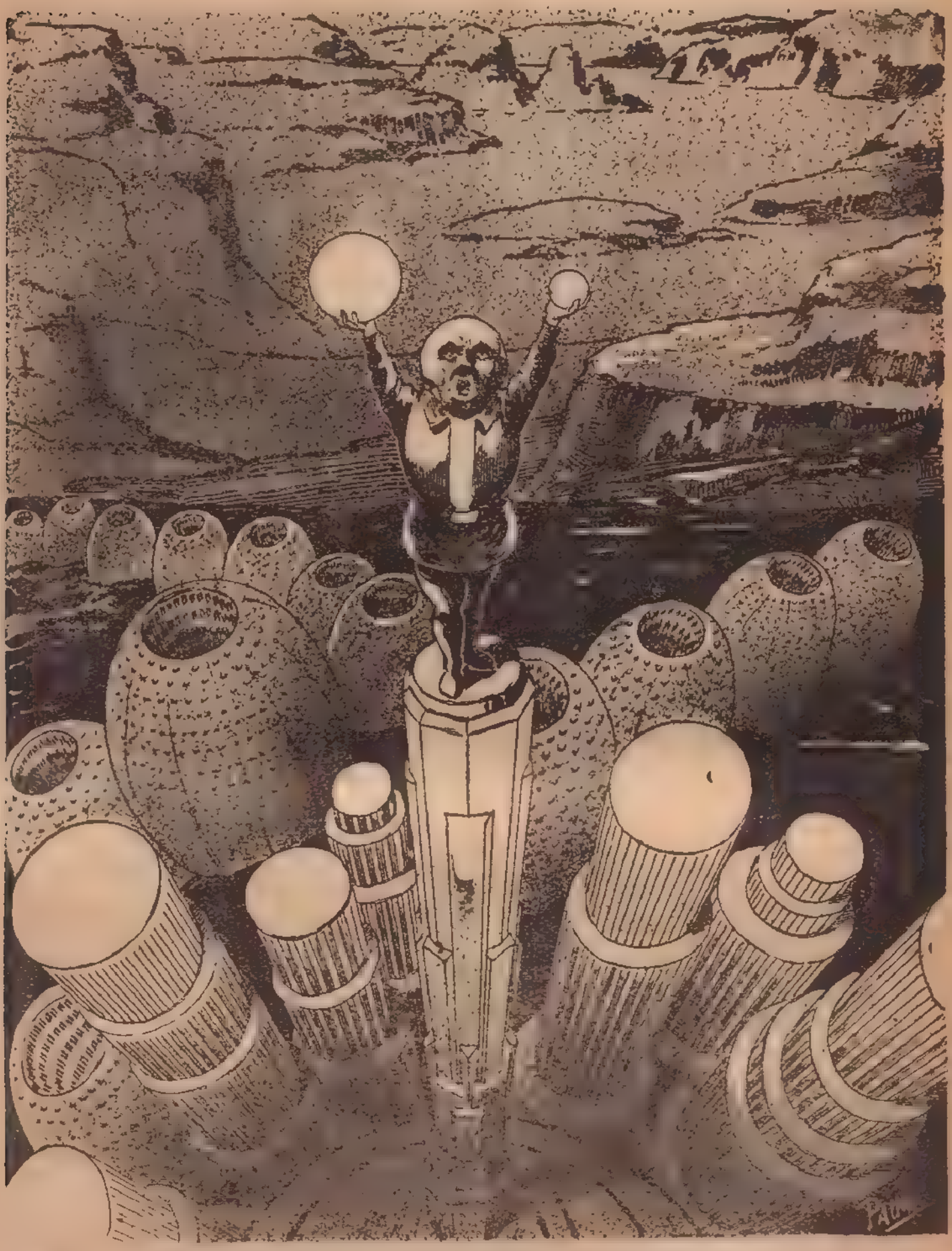
Now we do not say that there are not exceptions to our policy. The exception confirms the rule, you know. Readers constantly clamor for the science-fiction masterpieces produced abroad, and we present them to you regularly, though the plots are not revolutionary as in the shorter stories written by our domestic authors.

Then again, it is only human that we slip up now and then, but on the whole, you will find that we print more stories of the new era in science-fiction than all other science-fiction magazines put together.

If you are skeptical, we want you to take the current issues of all the magazines in competition and outline a short synopsis of the plots and basic ideas in the stories. Compare them. Notice that nearly every story in WONDER STORIES is not about a mad scientist who plans to conquer or destroy the world. Notice that there are not several about the end of mankind. Notice that there are decidedly few where terrible horrors are let loose upon mankind. You will find this fact more pronounced if you take all our issues of the past year and compare them with our competitors'.

You will find that we are putting it altogether too mildly. Detective and love story magazines demand hackwork. Let us congratulate our worthy competitors for getting it without having to demand! For the greatest amount of original science-fiction, read

WONDER STORIES



(Illustration by Paul)

Around the feet of the colossus reared a mixture of richly detailed architecture of a type that was foreign to their eyes.

DAWN TO DUSK

By EANDO BINDER

PART TWO

WHAT HAS GONE BEFORE:

● Professor Reinhardt invites six men to his home in Boston, five of whom are distinguished, world-renowned scientists, the other being a young chemist friend of his. He tells them that he has discovered the secret of suspended animation and intends to go to sleep, with any who will accompany him, for ten or twenty thousand years. All of them refuse, laughing at his crazy idea, except the young chemist and two of the scientists who go with him into the long sleep to the future world. Professor Reinhardt and Boswell, the chemist, are the only ones who survive. They find themselves in a strange world, and they can only guess what year it is. The strange beings, though human, strike them as far advanced over their own type, and this leads them to think that they have travelled much more than twenty thousand years into the future. Then, as an after effect of the sleep-virus, they fall unconscious for a while. As part two starts, we find them face to face with the men of the future, and they are about to learn things which will stagger their imagination. *Now go on with the story:*

CHAPTER V

Monituperal Explains

● When young Boswell next opened his eyes, he found it hard to gather his thoughts. He saw plainly enough that he was in a different place than where the caskets had been unsealed and nearby he could distinguish the form of his companion lying on a billowing expanse of very white material, covered with a thin blanket. He remembered clearly the events succeeding the unsealing, up until the attack of that strange ailment that had prostrated them, but from then on things were exceedingly muddled. He felt there had been a definite period of time between the prostration and this awakening, but it was filled with memories of dreams—

● The first instalment of this story left us in a quandary. Boswell and the professor have been in suspended animation for an unknown length of time. Just what year is it upon their awakening?

The answer to this question provides us with a series of incidents hard to equal in other stories. Like in "Enslaved Brains," Mr. Binder has a tremendous revelation which leads to thrilling adventures and amazing discoveries.

Though the two men from the past were supposed to have slept somewhere between ten and twenty thousand years, the professor states that the evolution which had taken place in the human race during the time of their sleep must have required much more than one hundred thousand years! Is he right in his assumption or are the men who discovered them, and unearthed their caskets, from another planet and of another race? We shall soon find out.

dreams that had sometimes chilled him with dread and sometimes soothed him with sweet sadness. At times he had had visions of white-robed figures bending over him with strange things in their hands, soft lights, and humming noises. Then he would see the four caskets in their frame as from a distance, snapping apart and tossing in the forces of earthquakes and volcanoes. Monstrous creatures with evil faces would rip off the lids and pull out the sleepers like one would an oyster. Such horrible scenes would be replaced by a vision of pure whiteness and purring lights. So blended was the real and unreal that Boswell could not say where one began and where the other stopped.

He looked again at the biologist. His eyes were fast shut and he was breathing deeply and regularly in restful slumber. Boswell was puzzled. They had been sick, he knew; and the people of this age had ministered to them, but he felt there was

something more. It seemed that many things had happened of which he could remember nothing—a vague undercurrent of fleeting impressions. He felt a new strength within him that he had never felt before, like a person who has been relieved of a physical disorder of long standing. Suddenly he became aware of one thing—his chest was rising and falling much more rapidly than it ever had before. And yet it was not the pant of chronic asthma or of deadly pneumonia, but a regular, easy breathing. Unless his time-sense had been distorted, he knew that his respiration—and that of the professor's too, he could see—was probably twice normal. A sudden suspicion caused him to feel for his pulse. He found his heart beating with an unwonted rapidity that he sensed could not be normal. He thought of calling to Professor Reinhardt then to communicate to him those astonishing things, but the biologist slumbered on despite Boswell's repeated calling of his name, each one louder than the last.

Boswell was about to reach over to shake his shoulder, having already raised himself to a sitting posture, when he caught out of the corner of his eye a reddening of part of the wall. Next moment the man he already had seen upon his first awakening stood before him, grave and dignified. For a long minute, the intruder looked at him with those eyes that bespoke infinite intelligence. Then he spoke in a silk-smooth voice.

"You have awakened somewhat sooner than we expected. You have a very strong constitution. Do you feel weak?"

For a moment young Boswell thought he was in the midst of a realistic dream, for although the speaker had not used English, he had understood every word he said.

He recovered and answered, "No, I feel quite strong. But tell me please, how is it that I am able to understand and speak your language?"

A faint smile appeared on the lips of the large-skulled man.

"I will tell you that and several other things. Lie down while I talk. Although you feel strong, you are really very weak."

Boswell complied readily, for even those few minutes in an upright posture had drained his strength so that he would have fallen back anyway. He turned his eager eyes on the other, waiting to hear those things that would all be in the nature of revelations to him.

"You and your companion," went on the man of the future in his pleasing voice, "had been entombed in suspended animation for a long time—how long I cannot tell you just yet until I compare our time system with yours. When you awoke and stepped out of your casket, you were able to think and talk and move only because the excitement bore up your spirit. We left you alone when your companion was resurrected so that you two might greet each other unmolested. However, we had our eye on you and saw you both fall helpless. I might say now that it took all our efforts to keep you from death; the spark of life had indeed burned low after that short time of renewed activity. You have been sick for a long time—longer than you imagine—constantly hovering between life and death. I will not tell you about the numerous times we gave you up for lost, only to find a new strength arise within you whose source we do not know. Suffice it to say that finally we won the battle. During your long, gradual recovery—you were kept in constant drugged sleep for certain medical reasons—we have taken the liberty of doing certain things.

"We have increased the rate of your respiration to offset the lower percentage of oxygen available in this atmosphere; we have increased your heart action and your body functions to raise the temperature of your body because of the fact that this air is cooler than any to which you have been accustomed. We have also operated on you to remove all excreta from your alimentary system. From now on you will no longer produce waste products. Our food is so made that the total of it is assimilated by the body. None of these changes, let me add, will harm you in the least, and in view of the fact that

you will probably live here the rest of your lives, they were necessary for your own convenience. You agree with me?"

Boswell nodded his head vigorously, his mind already whirling from the astounding things his visitor had told him.

"Furthermore," continued the other, "we have placed in your minds by processes which are beyond your ability to understand as yet, a rudimentary knowledge of our language, enough of it so that you can understand me. The complete command of our language will not come to you until later, when you have been duly instructed in its intricacies.

"All measurements of any sort are meaningless to you at present—although you might recognize the sound of the words—because we have as yet no common basis of comparison. For good reasons, I must ask you for certain items of information. First of all, how many times did the earth rotate on its axis for every revolution around the sun at the time you were buried?"

"There were 365¼ rotations for one revolution," answered Boswell.

For the first time that he could remember, young Boswell saw a look in the other's face that might be akin to astonishment. They had seemed to have calmness that nothing could jar—even at the opening of Boswell's casket, he remembered that when they had first looked at him, there was nothing of astonishment in their faces.

"365¼ rotations," repeated the other. "That is remarkable. Now tell me what you called in your language that period of rotation and revolution and any other divisions."

● Boswell ran through the scale: century, year, month, week, day, hour, minute, second. The bulbous-headed man would repeat the word in English and its equivalent in the time system and then nod his head as each was explained.

"That is taken care of," said the visitor. "I need these facts to form a basis of comparison between our present system and yours. Now for linear measurement. What was the diameter of the earth in your system?"

"Approximately 8,000 of what we call 'miles'," answered Boswell.

"That will do for the present. Later we will establish a more accurate basis. Now give me the divisions of that unit."

Boswell went down the linear scale: mile, rod, yard, foot, inch, and mentioned the metric system and its connection with the English system.

"Enough," said the other. "Time and distance will do for the present. Area and volume we can compare at some future time. Now about your physical habits. You took solid food in the age from which you come, at definite intervals, and indulged in a coma, also at regulated intervals?"

"Yes," replied Boswell. "We ate food three times a 'day,' and slept about eight 'hours' each 'day.' "

"I see," nodded the other. "From now on, however, you will not have to eat. That is, not solid food"—he amended the statement at Boswell's look of surprise—"at regular intervals. The air you breathe contains a gas which is a perfect blending of the materials needed by the body cells to thrive and live. Every breath you take is depositing in your lungs this food, which is easily dissolved into the blood stream. As for sleeping, I am afraid that we cannot do away with that until sometime in the future when we have examined your nervous systems more thoroughly. We will let you sleep at regular intervals until such time."

Boswell, much as his expansive mind could absorb things never before suspected, could not help asking: "You people do not sleep at all?"

"Never," answered the other. "That evil habit died out long ago. The word 'sleep' is an obsolete one in our language. It was merely an unnatural condition of the human nervous system. You have been accustomed to drink water?"

At Boswell's nod, he went on: "But no longer. Water is only needed in excess when food is imperfect, as an aid to digestion. The little water you need to replace

that lost in respiration is perfectly balanced by the amount absorbed. This atmosphere contains the exact amount of moisture necessary for that purpose. Your physical action in the future will be so regulated that the unnecessary process of perspiration will never occur. And now, my friend from the past, I will leave you. You are still not very well, and until such time as we find you fit to arise, you and your companion will remain in a reclining state."

"One thing," called Boswell. "Don't you think that it would be convenient for us to know each other's names?"

"Yes, it would," answered the other. "Let me tell you first what a name is to us. It indicates the following things: time of birth, sex, vocation, and avocation. I will tell you more of vocation and avocation some future time. However, my name is Monituperal. The 'al' indicates masculine sex. The feminine suffix is 'in'. The source of the rest of the name would be meaningless to you until you knew further of present life. And what are your names?"

"My companion is Professor Reinhardt; I am Andrew Boswell."

"Very odd names to my ear," said the other with again a faint smile which seemed unable to break the ice of melancholy that was characteristic of these people's faces. "Some time you will tell me more about them. But now I will leave."

Boswell stared long at the part of the wall through which the visitor had vanished, his thoughts a mixture of all the emotions which are akin to surprise. And yet he sensed that the few things he had learned so far were but a tenth of the wonders that were yet to come.

Professor Reinhardt had slept peacefully during the conversation but now he began to stir and twist in the soft material on which he lay. At Boswell's call he opened his eyes and turned his head.

"Professor," said Boswell excitedly, leaning on his elbow, "I just had a visitor while you slept and I'm beginning to wonder if I'm dreaming or not. He came in through the wall as usual—oh, by the way, how do you feel?"

"A little weak, Andrew, but go ahead with what you are saying."

"Well, he came in, as I said, and talked to me . . . ."

"Talked to you?" repeated the biologist amazed. "How . . . . when did he learn English?"

"Talked to me in his own tongue," said Boswell, using the language new to them and watching his companion curiously the while.

Professor Reinhardt started as he realized that he understood the words.

"So we know the language," he said in the same tongue. "Well, go ahead Andrew," he finished in English.

"Here's what he told me," continued Boswell. "We've been sick a long time, even near death. During our recovery they increased our rate of respiration, heart action, and body functions and taught us their language—why, even now while I'm talking in English, it seems stiff and lame compared to theirs. Then, from now on we will breathe in our food and water and . . . ."

"Now hold on, Andrew," cried the professor. "You've got to go slower than that. I'm dizzy listening."

"All right," chuckled Boswell. "But I'm going to use their language because it's much more expressive."

Thereupon he recounted all that had transpired between him and Monituperal, all those things that marked their entrance into this world of the future.

"They are remarkable physiologists," commented the professor as his companion finished. "Andrew, I have a feeling that we are going to come up against many things soon that our intellects will fail to comprehend. Just how far in the future we are from our century, I don't know, but it is so far ahead that I doubt that we will ever fully understand these things that will be revealed to our wondering eyes. You see, intelligence is a product of growth. Without the background of knowledge—inherited, but yet intangi-

ble—that these people have, we can never hope to equal their ability for understanding. You have felt, haven't you, Andrew, a mental shrinking in their presence?"

"Exactly, professor," agreed Boswell, "a feeling that they are on a mountain top and I in a valley, in respect to intelligence. But have you noticed, professor, that look of inifinite sadness in their features, as if they carried an immense load of sorrow in their hearts? Perhaps you haven't . . ."

"On the contrary," returned the biologist, "that reminds me that I wanted to ask you about that very thing. During the past few days—or maybe it has been weeks—while we have been sick, I have had numerous dreams and visions and momentary waking spells—although I don't know which are which. The people that figured in the incidents, however, always had that sadness about them that provoked my curiosity. I just wonder if some disaster has befallen them, or is due to come, or what."

"I've wondered myself," remarked Boswell. "It seems to me that with the advancement and enlightenment that they must now have, they should be the most happy and contented people in the universe."

"That would be logical. But it's useless to guess till we know more facts," the biologist said practically. "For the present, all we can do is hope for speedy recovery. It ought to be speedy, too, for I can just feel the invigorating, healing influence of this wonderful air. Perhaps it contains not only food but medicines so that with every breath we draw, we are that much closer to normal. What a remarkable thing, my young friend, this idea of combining breathing with eating. We are like the plants, now, extracting food from the air. Speaking of plants, that reminds me. I wonder what the outside world looks like? We can expect it to be vastly different. Sunlight will be weaker, the days will be longer, topography is probably very different, forests might be nonexistent, animal life might also be a thing of the past. Then among other things, we may be able to visit other planets, see other forms of life in our solar system, find the answer to the mystery of Mars' canals and Venus' rotation and the rings of Saturn and the possible existence of other planets besides the nine we knew and . . . ."

● Professor Reinhardt stopped and smiled. "My young friend and companion, the curse of imagination runs away with my tongue. It was that same imagination that is the cause of our being here . . . . here where we hardly belong, I'm tempted to say."

"Nonsense," cried Boswell, whose eyes had been shining while the biologist mentioned the things they might soon witness. "We have a perfect right to be here. We might even prove of a certain historical value to these people; it is wholly possible that they have lost all records of the age in which we lived so that our information will be priceless to them. Personally, I wouldn't trade places with anybody right now. This is really Adventure with a capital A."

"Bravo," smiled the biologist. "Fate took a terrible toll in the loss of our two companions, but She has very kindly left you, for which I am thankful. Honestly, my young friend, I would actually dread being here alone in this age. I am afraid these things that lose their mystery somewhat as we talk them over, would soon drive me mad were I all alone."

"I have felt that way myself, Professor. Perhaps you can imagine how I felt when I saw two of the caskets mutilated and hardly dared look at yours for fear I would see the same thing," remarked Boswell.

The biologist sighed heavily as he thought of the two broken caskets. "Callahan and Goodwin . . . . they must have died centuries ago. There can be nothing left of them. Even the cotton on which they lay would disintegrate gradually and escape as flying atoms and molecules. If we ever care to open their caskets—which have become their coffins—all we would find would be two aluminum plates, scratched with writing . . . ."

Then there was a long silence. Boswell found himself thinking about his life in the long ago past, his work, his recreation, his circle of life—how insignificant and futile it seemed now, how utterly and unthinkably narrow. It had been a cage—a man-made cage, and this . . . . this was the open field.

When next he looked to his companion, he found him fast asleep. Young Boswell felt his own eyes grow heavy and dropped to peaceful slumber.

CHAPTER VI

Life of the Future

When next Boswell opened his eyes, he looked directly into the melancholy face of Monituperal. He sensed that he had emerged from a sleeping state as by a signal, for he noticed that Professor Reinhardt sat up at the same time he had. Monituperal seemed in no hurry and waited motionlessly until they had rubbed the sleep out of their eyes. Then he spoke

"Andrew Boswell and Professor Reinhardt, you have now fully recovered. I have told you of the alterations made on your bodies' functions while you were yet in the coma. Another thing we have done is remove from your bodies all germs that can cause sickness. Some of those germs are curiosities to us; we have never seen them before. Another step we plan to take, but we will not do so without your full accord, is to remove that unsightly hair on various parts of your body. It is unnecessary and unclean. However, we will leave that for the present. Right now I ask that you accompany me to another room where we will discuss certain matters. Stand here with me and hold my hands."

Obediently they jumped from their "beds" and stood on either side of Monituperal, each holding one of his hands. They saw the wall glow red, and in a trice felt themselves whisked away. With the most confused of impressions, they found themselves in what might be called a lounging room. Their guide pointed to cup-shaped, artistically designed seats and lowered himself into one facing them.

Boswell found himself wanting to ask how they had been transported so magically to this room, but felt too much in awe of the bulbous-headed man to do so. Above him he noticed a spherical object with a number of frosted orbs and tubes set in its surface. He choked down a gasp when he noticed that it was suspended in mid-air, apparently connected with nothing. It was motionless and silent until Monituperal looked up to it. Then it slowly swung horizontally till it was poised at a point midway between the three men. Then it seemed to lock into place.

"My friends from the past," began Monituperal, "you know who I am by name only. Let me further explain that my avocation, or what you may call 'hobby,' is ancient history. Some time ago your caskets were found and turned over to me as being of most value in my pursuit.

"First of all, you know that you are on the planet nearest the sun. What is your name for it?"

"Mercury," gasped Professor Reinhardt. "But, may I ask, why did you bring us to Mercury? Why did you take us away from Earth?"

Only a slight widening of the eyes indicated the surprise that Monituperal felt. "Is it possible," he asked, "that you do not know that Earth . . . ."

He stopped and changed the question: "How many of your 'years' do you think you have been in suspended animation?"

"At the time we left our age," supplied the biologist, "we had planned on being dug up and revived not more than twenty thousand 'years' afterward. Of course, I realize that it may be all of a half million 'years', from certain deductions of my own."

For a long minute there was utter silence as Monituperal looked from one to the other. Under the lash of impatience, Boswell squirmed in his seat.

"My friends from the past," finally came from Monituperal slowly, "prepare your minds for a shock." He paused and

then continued still more slowly, "You were buried approximately *two billion of your 'years' ago.*"

● Boswell felt his brain grow numb. The statement lashed into his mind like a whip and left a sting that tingled more and more as he found himself repeating out loud, "Two billion years! two billion years! Let's see, that's two thousand million years!—two thousand million years!" To his dim consciousness came a mumble from his companion who was dazedly saying, "Twenty million centuries! Twenty million centuries!"

Then Boswell heard Professor Reinhardt say in a hushed voice: "Are you sure there is no mistake, Monituperal?"

"Quite," said he without hesitation. "We have figured back in time with the data that the earth rotated 365¼ times for every revolution in your age. At present your earth no longer rotates that fast. It presents one face to the sun all the time, thus making one rotation per revolution. Furthermore, it is much nearer to the sun and revolves in less time than formerly. Incidentally, the sun is no longer the sun you knew; its fires have abated through the ages. This is the sun . . . ."

The room suddenly became pitch black. They seemed to be out in space, surrounded by a multitude of stars. Then, as if turning around in the void, the sun came into view. First came a slight haze of yellow, all that remained of the magnificent corona of the past, then a disc of a dull red sphere. Gone was the fiery brilliance that they had known of the sun of yore, those long streamers of rose and yellow and the burning intenseness that it once possessed. Now they could look directly at it without hurting their eyes; a dull, black-spotted, slightly glowing cinder, shedding a feeble stream of rays that seemed to die in weakness in mid-space.

Then the room became light again. Boswell blinked his eyes in the sudden brilliance and saw a half-smile on Monituperal's face. Then it became expressionless again as he spoke.

"That was a view of the sun at present from the distance of the earth. Now you can perhaps more fully credit that you saw it last two billion 'years' ago."

"We believe you, Monituperal," said the biologist who had regained some of his normal poise, "but I would like to ask you this: how is it that the sun has burned out so quickly? In our time there was a popular theory that the sun would last for perhaps a thousand billion 'years' before it became reduced to the state it is in now."

"I cannot answer your question until I hear more of your theory. Obviously, the theory was much in error. But we will not go into that now. Let us stick to generalities," said Monituperal.

"Is there any life on Earth now?" asked the professor.

Monituperal shook his head slowly. "There is no life at all in the solar system now except here on Mercury. All the planets are cold, practically airless, and completely lifeless. Even this planet, the only one to harbor life, is in that condition. Mankind has entombed himself underground, to make a last stand against oblivion . . . ."

Suddenly the lines of sadness in Monituperal's face deepened, became accentuated till the melancholia that had always hovered in his eyes became a living force, radiating waves that struck the other two like a terrific blow. A distressing pain grew in Boswell's heart, for, after all, his interests were one with Monituperal's. They were all of the same stock, brothers in purpose and aim. They were simply separated by time in the scale of advancement.

Then Monituperal brightened somewhat and spoke in more cheerful tones. "But, my friends from the Dawn, let us not dwell on that. I will relate how you were found. Just recently I made a journey to Earth—which is the cradle of mankind as I will relate sometime—to look for further records of the past of humanity. Little did I think I would find such priceless things as mental caskets dating back to a period of which we today have

not one existing record, except vague, almost mythical references which exist in much later records. Am I right when I suggest that at the time you lived, before your burial, there were wild animals and plants around you?"

"Many of them," assured the biologist. "We ate them as food."

"Just as I thought," continued Monituperal. "And you had night and day, and diseases, and oceans, and rivers, and crime, and governments, and wars. Those are things we know nothing of. But more of that later.

"We could see, we that found the caskets, that here was something earlier than anything we had previously found. We took our find back to Mercury and examined the insides. We saw your two forms, much to our astonishment, apparently unharmed. Let me say here that suspended animation for the purpose of visiting a future age was indulged in quite frequently throughout the ages, but the earliest man to succeed, in our records, lived in an age at least one hunderd thousand 'years' after you. Not very long ago there was found a sealed tomb containing twelve men who added much to our knowledge of their time, but they were a million 'years' after you.

"But they had obviously prepared for the immense ages during which the forces of nature would batter them, and placed themselves in infinitely strong and undamageable containers of metals that knew no corrosion. You, my friends, are alive today only by the sheerest chance. Your caskets were far too inadequate to last two billion 'years' under standard conditions. No one will ever know, of course, to what you owe that slim chance that saved you from a multitude of destructive forces. All we know is that your caskets and frame were found lying in the bottom of a gigantic rent in the ground which we passed over in our ship.

● "We opened your casket first, Andrew Boswell, prepared to revive you if you failed to awaken by yourself. I told my companions then that I thought you dated from a period even earlier than the 'Man from the Dawn of Life' who has come down in our history. My companions thought it doubtful as you looked so nearly like the pictures of him that we have, but now we find that you preceded him by one hundred thousand 'years.' You are indeed a priceless find to us in a historical sense, for you are that much nearer the ultimate source of life on Earth, of which we know absolutely nothing. Am I right that during your time much was known about the first beginnings of life on earth?"

"Yes," answered the biologist, "but unfortunately, only in a vague way. At the time we lived, the study of the rise of intelligence had just begun. If we had lived another thousand 'years' and then departed, we would have known more of fact and less of theory, for I am sure our immediate descendants must have unearthed much valuable information."

"Even so, the information you have will every bit of it be new to us. We have lived in hope that a man from your period would some day be found. The 'Man from the Dawn of Life' seems to have lived in a period following a devastating 'Ice Age,' which, I presume, separated his period from yours. His information revealed that almost all traces of previous civilization had been destroyed, that man had had to rise again from what he called 'barbarism' after that 'Ice Age.' From that period until a million 'years' after your period, not one single record exists, so you can see how little we know of the beginnings of mankind. All we do know is that intelligence comes from outer space in the form of spores and . . . ."

"What's that you say?" almost shouted the professor. "Is it a known fact then that intelligence does not just spring up unbidden?"

"Yes," replied Monituperal. "We know that because of the fact that although every planet and planetary satellite has become ideal for rational life at various times, depending on their rate of cooling down, none have evolved intelligence except earth. That points to the obvious fact

that intelligence must come from outer space. We know too that it comes in man-made or rather intelligence-made spores, because we have made them and scattered them in outer space ourselves ever since the process was perfected—that was some half-million 'years' ago. We, like the rational beings who made the spores that touched earth and evolved, are seeding the void that intellect will not die out. But how is it, Professor Reinhardt, that you are so interested in that? Surely in your age, such a fact could not have been even vaguely suspected. The theory did not spring up till at least fifty million 'years' after your age, and its proof, not until a half-million 'years' ago."

"I am proud to say," said Boswell as the biologist had found himself unable to speak in excitement, "that Professor Reinhardt announced the theory on Earth two billion 'years' ago and progressed in some degree in producing the spores."

"Very remarkable," commented Monituperal while the biologist reddened in confusion. "Well, we will leave that as it stands.

"My friends from the past, I have outlined a program which I think will be best to follow. My plan for the present consists of an outlined description of present life to you. After your next sleeping period I will outline for you the Story of Mankind —as much of it as is recorded. Then, whenever you are ready for it, I will borrow your brains for a certain period to extract from them all information of the age in which you lived. We have a much more efficient method of extracting such information than by word of mouth. We will remove your brains from your skulls and submit them to certain instruments we have that will record the data much more quickly and accurately than any other way. It will not harm your physical bodies nor your mental powers in the least. After that we will give you as much of present knowledge as is possible by the same method we used to teach you our tongue. In due time you will become a member of our society for the rest of your life which we will prolong to about five hundred 'years'. Have you any objections to those plans—for we will do nothing without your uninfluenced free will?"

"None whatsoever," answered Professor Reinhardt for them both. "We place ourselves absolutely in your hands."

"Good," said Monituperal. "Then I will carry out the plan for now which is to sketch for you present civilization."

"Pardon me, Monituperal," said Boswell, unable to contain himself any longer, "but what is that spherical affair hanging above us in mid-air?"

● Monituperal smiled his characteristic half-smile before he answered: "That is an instrument that broadcasts both sound and light in this room. I would willingly wager that almost every person on Mercury is watching your every move and drinking in your every word, for although emotions have been placed under absolute control in the ages of civilization, they still exist, for they are an essential part of intelligence. You can readily see what avid interest we have in you when you remember that you come from an age which is two billion 'years' removed in time. In fact, that period of time almost completely spans the duration of rational life in the solar system. But don't ask me to enlarge on that just yet. That will come out in the Story of Mankind.

"Now for a description of present human life as it exists here on Mercury. Human life has been here on this planet in full for the last fifty million 'years.' We number at present about one hundred million lives. It is a small number in your conception, is it not?"

"Very," replied Professor Reinhardt. "In our age there were over two billion inhabitants."

"Yet that is a small number compared to hordes that lived about a billion 'years' ago, when it reached the astonishing total of a half trillion. Nevertheless, the present population is one hundred million—all that remains of mankind in the solar system. I will touch upon government, religion, social life, crime, war, science, labor, education, and the intellectual level,

all of which are vastly different from what you knew them to be.

"To begin—we have nothing in this age that resembles what you know as government. Let me define it first: government is a system of preserving unity. It is necessary only while rational life is divided into individual opinion and concept. It can be done away with when mass opinion flows one way, or when individual ideas do not disagree. The latter prevails in this age. Perhaps you will find it hard to believe that of our millions living, not one ever conceives differences with the others, not because he fears weight of opinion in the majority, but because *there is nothing to find fault with!* This is an age of reason, and logical reasoning has long ago uprooted *anything* that might stir to life *discord*, which was buried along with other non-reasonable things in the past.

"So the human race in this age has no government. Yet we live in perfect harmony as a community and individualism in the extreme is unknown. Nothing, my friends from the Dawn, is done today against the will of any person. And no person today has a will in discord with the things done. This naturally leads to the topic of intellectual level. Every person living in this age has gone through the same school of thought—a school of thought that has been upheld by millions of 'years' of existence—so that each mind is based on truth. Any individual thought beyond that becomes so involved and far-removed, that it can no longer affect the life of the originating mind. Have you any questions?"

"This," said Professor Reinhardt. "If there is no government, no regulating body, who or what apportions the work to be done?"

"That immediately brings me to the explanation of vocation and avocation, about which I promised enlightenment to you before. With the advancement that the human race knows today, work has become a relatively minor thing in our lives. To keep our gigantic machines running, to mine, to manufacture, to improve, to supply the necessities of life, involves but a very small part of our total time. Furthermore, any person living can duplicate the 'labor'—to call it that, although to you it would seem more like play—of any other person. In plain words, everyone's vocation is the same. We have just one vocation—to keep our machines and instruments running. For the most part, they run without attention. Automatic signals inform us when a human being is needed. Thereupon any person who wishes to fill his work-record another space or so—everyone's work-record has the same number of spaces—flashes his name there by a method you cannot understand at present. If his name is first, he goes. If not, he awaits the next opportunity.

"Now you wonder what is done with the rest of an individual's time, as I have shown that so little of it is occupied with work. Avocation is the answer. My avocation is ancient history, the reason why I scoured Earth and found your caskets. Another person's may be astronomy, chemistry, or any other science, drama, or exploration or a multitude of other things that I cannot begin to describe because you would not understand. Thus you see that only in avocation do we individualize. Yet through all this runs our basis of thought which can be summed up in one word—brotherhood. There is no such thing as 'money'—an obsolete word—or 'personal property,' or monopoly. Everything we have is common property to be had for the taking. This never leads to trouble for two grand reasons; because of our unity of thought, and because there is more than enough of everything material needed for any type of endeavor.

"Perhaps you find it hard to follow me. I am trying to simplify it as much as possible and to project it into your line of thinking which I am able to do only because of my intensive studies in past human history. I am using obsolete words and antiquated ideas simply because the true picture of our existence will not be revealed to you till you have lived with us for many 'years.' I know perfectly well that to everyone listening to this conversa-

tion concerning my fellow men and women, my expression seems crude and 'barbaric,' but they understand at the same time that it is impossible to explain these things in any other way to humans from the Dawn of Life. Yet, Professor Reinhardt and Andrew Boswell, you must not think that I am belittling you. Rather think of this as the necessary introduction to a life that would cloud your mind with fatal bewilderment were it to be revealed at one stroke."

"We understand perfectly," assured Professor Reinhardt, "that anything you say and do must be far more fitting than anything we could suggest or even think of in the slightness of our poor understanding."

"Very well spoken," said Monituperal and Boswell thought he detected a momentary gleam of commendation in his eyes, "and let me tell you a little secret; during your convalescence, we made certain tests on your brains which, I can honestly say, surprised us considerably. Your intellectual capacity—putting it in words you can comprehend—far outstrips the logical capacity that would seem more correct in view of your early origin. It falls in with a certain theory of mine that human life in the Dawn was gifted with much more of the original intellectuality of the spores than post-Dawn life. In fact, you, Andrew Boswell, by some quirk of nature, are endowed with a mental capacity that surprised us beyond all measure. Tell me, as a matter of curiosity, did not the both of you yearn for other things in your life—not material things but a new and better world—with an intenseness that left you no peace?"

Boswell and Professor Reinhardt looked at each other in awed wonder.

"You have placed a finger at the core of our previous life," answered the biologist. "We called it 'Imagination.'"

"And that is why you are here with me, because that 'imagination' drove you from an age that suited you no more than it would me?"

"It amounts to that in brief," answered the biologist.

CHAPTER VII

A Tragic Revelation

Monituperal nodded his bulbous head and went on with his discourse.

"Now that I have explained, in brief, vocation and avocation, the question of social life follows. The unified thought behind our social life is 'brotherhood.' We, the product of æons of rational life, are so completely standardized as to be almost like the arms of some greater being which we could call Intellect. Ages of natural merging of different qualities has been attained in this race whose members are prototypes, one of the other. We differ very little physically and just a little more mentally, none at all spiritually. We have no personal life, unless one would call the pursuance of our avocations a personal life; but even in that, never have we known of any person making a personal secret of anything he did or thought. Equality—which in the history I have followed so avidly seemed ever to be beyond reach—exists today and has existed so long in our civilization that we have to probe back ages to find anything different.

"There are no classes, sects, castes, strata, or levels of society—all obsolete words in the social sense—in this age. We are one and all equal—not merely in treatment, but in effect—and have but one thought to ward one another—'brotherhood.' There are no family ties that divide us into groups. Sex has long ceased to be a differentiation point in social life. Our sexual relations are far too removed from what you can understand for me even to touch upon it.

"Our social relationship consists of individually willed contacts. No one attempts in any way to restrict the actions of another. This 'city' we live in is a vast underground system of rooms and chambers, ranging from the machine-rooms to individual lounging rooms. There are no 'doors' and we are free to go anywhere without restriction. We have no personal 'privacy.' Such a thing was a misconception of early rational life, as my re-

searches in the past have revealed. Reason alone, which is in our members from infancy on, guides our individual action. 'Recreation' in our lives is replaced by the perfect content that we have in our lives.

With work easily done, and with our avocations to occupy our time, there is nothing left in the scheme of things. Only two things there are that attract groups of people together; they are drama and music. You would not understand our drama, nor could you appreciate our music as yet, so of them I will say nothing.

"So you can faintly see what social life means today: perfect individual freedom, absolutely no division into parties, no such fantastic thing as 'personal property or privacy,' and a total lack of spiritual friction between the members of this civilization. Furthermore, we have a system of communication that eliminates most of what you would call 'traveling' from one part of our 'city' to another. There is no reason to 'travel' because one end is the same as the other; the citizen in one corner is situated identically as is the citizen in the opposite corner.

"There is a subsidiary topic suggested by the examination of our social structure. That is human emotion. Emotion, beyond a doubt, is a part of intelligence, but it is dangerous and disastrous if uncontrolled. I would wager that this important aspect was neglected even up until the time of the great civilizations of a billion 'years' ago. But today and here, emotion, while recognized as a drawback more than anything else, has been placed in a position where it cannot do harm. Emotion, I am prone to add, is a heritage that came down to us along with the spark of intellectuality from the spores that mark the birth of life in the solar system. We can only guess at the innumerable times rational life has sprung up in this universe and waxed and waned, each leaving its mark on the spores it finally produced—a mark that comes to us as emotion. But I am getting in too deeply to continue on that subject.

"The next general topic to be considered is religion. What is religion? It is a vague groping toward an explanation, or a reason, behind all things, behind Life itself. It is the attempt of rational life to explain itself. It tries to fix a purpose behind the succession of life and death. In that sense alone do we still have religion. We are even today grasping for evidence of purpose in this sublime scheme of Life that has unfolded under our eyes through the ages that intelligence has flourished. But it is a useless quest. We, the end-product of civilization, are no nearer the solution than were the earliest human beings.

"But in this we differ: we do not let that spiritual searching infest or overrun our lives in any way. We see it in the true light, as an unanswerable question. We do not set up gods and idols and worship, for the purpose of getting in good grace with a Higher Power. We are content that there is such a Power, but we do not attempt to fall down on our knees before it to ask mercy of it.

"Religion as a creed of human life began with the birth of intelligence and despite its treacherous influence, never wholly died out until the present era began. It would smolder to ashes and then spring up in flame again time after time, playing a lamentable part in the rise of intelligence. It was a tool in the hands of scoundrels and selfish people, much to the harm of others. It had never been understood as something to be open-minded about, but as something to be clothed in mysticism and secrecy. Probably you will be able to tell me more about that than I can tell you.

"Now we come to science. Defined, it is the utilization of things concrete and useful. Perhaps your definition was different. But in this our ideas must agree: that the human race fell heir to an immense wealth of energy, manifested in various forms. It has always been the mainstay and support of civilization, lying at hand, waiting for exploitation. Perhaps the Divine Plan is a cosmic experiment of a Higher Power to see what intellect and energy can accomplish when put together. No one knows, but we can readily see that science, which is the exploitation of energy, has

always been an essential part of civilization. Science today is totally amongst the avocations. It is necessarily slow and ponderous because of the great amount of it already done that need not be duplicated, but forges yet constantly ahead. I will not attempt to recite the innumerable things science has given us; you will gradually come upon that as you live with us.

"Education, which is accumulation of fact, is the childhood heritage of every person. It is quickly and efficiently acquired by the growing mind in the same way our language was taught you. And by that same process will you be initiated into this life we live. It would be simplest to say of education that there is not one thing in our lives that is not completely and fully understood by every person living.

"Of 'crime' and 'war'—both obsolete words—there is nothing to be said except that they are of a dim and remote past to us. We know nothing at all of them. The human mind outgrew them quite naturally. I only mentioned them to forestall your inevitable question concerning them.

"As a final word on the subject of life today, I will say something of the human body itself. It is, of course, a product of slow growth determined mainly by Nature, which has left us today what we are in outstanding points. But we have replaced Nature's work in several ways: we have given our lungs the task of absorbing food and water; we have speeded up healing processes; we have eliminated disease; and we have increased the life-span to five hundred 'years.' Death and the creation of life have defied the efforts of all mankind. Inside our bodies, in place of the stomach which is removed and now unnecessary, we have a nicely fitted metallic container holding instruments that give us complete individual control of gravitation and motion. Our legs, be it known to you, would collapse if we did not lighten our bodies when we walk with them, as we do at times for the sake of variety. The instruments are connected to the spinal cord so that our brain has perfect control of them and it takes but a thought to send us where we will.

"I've seen you, Andrew Boswell, about to ask me more than once, already, how I am able to go through walls. I will tell you and ease your curiosity. This going through walls and material things is possible by a slight distortion of the time value of the wall so that it ceases to exist for the fleeting instant necessary to go through it. I cannot explain it any more simply. That process, too, is controlled by the instruments in our bodies.

"Now I am done with this initial introduction to modern life. If you have any questions to ask . . . . ?"

"There is one I would like to ask," said Professor Reinhardt after a minute's silence. "You have mentioned infancy and childhood at times, but you have not specifically stated anything about your children. Where are they, and what place do they occupy in this age?"

● Like sundown in the tropics of the earth of long ago, a look of infinite sadness clouded Monituperal's face, suddenly and with swift gathering darkness. His great head bowed for an instant and his soul seemed to be crying out in voiceless agony. The two men from the past felt a wave of sorrow engulf them, but it did not come from the man in front of them alone; it seemed to pour in on them from all sides as if a great people were in mourning. "What can it be?" wondered Boswell to himself.

Finally Monituperal recovered and spoke. "My friends from the Dawn, you have touched a vital spot that brings us endless pain. But it is not your fault. It is inevitable that I should have to tell you this. I had planned to leave it for some other time, but perhaps it is best that you should know it now.

"My friends, you have journeyed from the beginnings of civilization to the very end. The human race is doomed to extinction!"

"Why, how is that?" cried Professor

Reinhardt. "Surely with the control of Nature that you have and the ideal life you lead, there can be no end . . . . oh, do you mean that with the dying of the sun, civilization also dies?"

"No," answered Monituperal in a grave low voice. "We are independent of the sun. That is immaterial to civilization—the dying of the sun. But there is a greater force . . . .

"But I will answer your other question. There are no children. It was only some hundred thousand 'years' ago that the alarming fact first became known that for some unknown reason, the human race was becoming sterile!"

"Sterile?" repeated the professor. "Unable to produce young?"

"Yes," answered Monituperal tonelessly. "It came slowly, like the plagues of history, touching a woman here and there with that black mark. Of course, a concerted effort was made to find the cause of the blight and remedy it. All efforts led to nothing. We have battled against it in all those 'years' with all our vast knowledge and science . . . . and we are still battling, but to no avail. When I was born three hundred 'years' ago, the majority of women were absolutely sterile. Today"—he wrung out the words with an effort—"all of them are. The last child was brought to life just thirty 'years' ago."

The two listeners were stunned and horror-stricken, unable to believe the crushing fact that they had come upon the very tail end of civilization, the finish of rational life.

Then Monituperal spoke again with a low voice in the brooding silence.

"It seems that some Higher Power has seen fit to end our kind. With our immense knowledge of biology, we can yet find no plausible reason for the catastrophe. Unable to create life with intelligence, and unable to stave off ultimate death, it will be just a few hundred 'years' till the end. My people are dying off at the rate of about 2,000 a 'year.' Our race has become sexless and unreproductive. Soon Mercury too will be winging through space as the other planets—dead and bearing no life . . . ."

Monituperal's voice trailed out to nothingness. He raised eyes that had become inert and dull.

"My friends, it was almost ironical that I should tell you of the life of this age, boasting of its perfectness, its great achievements, its mastery of the darker things of human life, only to finish up with the prophecy of its immediate end. But that is human nature—to live in hope. Not until the last man dies will we admit defeat. But defeat is here for we have already given up the struggle in all but spirit. For as long as I can remember, we have pursued regular lives as it was pursued a million 'years' ago before the coming of the blight. Why? Because the stark naked truth was revealed hundreds of 'years' ago that man could do nothing. I could detail for you the gigantic experiments whereby human intellect strove to halt the unconquerable march of extinction, experiments that hit the roof of endeavor at times, but it would mean nothing to you or to me. The end is upon us.

"We will live our ordered lives to the end . . . . because that is the spirit of life. We have tried to close our minds to the dread thought of the absolute end of intelligent life, to live with that bravery of spirit that has come down to us from our vast ancestry, but it has found its way into our psychology . . . . has left its mark in our faces and actions. Our only consolation is the belief that we have not lived in vain, that we are part of some colossal cosmic plan whose proving ground is the entire universe from one end of space to another. Into those countless billions of spores which have been scattered in the void has been compressed whatever part of their intellectual composition can be attributed to mankind in this solar system. We will live again through those spores as the subsconscious undertow of the forms of rational life which will come into being in future ages. Our intellectual children, profoundly different though they might be, will spring up on some favorable world of which

there are an almost infinite number constantly forming in the crucibles of the laboratories of space, the nebulae, and grow to their destiny. Our exploring ships to other stars have found strange, indestructible monuments on some of the dead worlds, relics of separate intellectual peoples, left there as the sole reminder that once in the remote past—of a remoteness, some of them, that would be incomprehensible to our minds—that world harbored intelligence. So too are we building on earth now a monument of solid diamond. Perhaps in the distant future a strange ship bearing life which grew from our spores will land there and flash lights on the sparkling stone and wonder what race of rational life left that as their epitaph."

● The speaker's voice died to silence; his eyes were filled with the tragic wisdom of all eternity. A gleam was born in their depths, a gleam that became a living spark of Truth. When he next spoke, it was not the mind of Monituperal that revealed itself but something Higher — something greater.

"It is not what Mankind gets from life, but what Mankind puts into life, that scores in the records of the Sublime Plan. Only a series of epitaphs mark the births and deaths of civilizations, but each . . . . every one, has contributed its little share in the development of Intellect . . . . until sometime, perhaps, that Essence of all intelligent life will come to its Ultimate Reward. What that will be is not given to the separate civilizations to understand; it is something beyond the ken of our minds."

Professor Reinhardt sat like a graven image, his face a picture of dim understanding and vague hope. Boswell had left the material world behind, his powerful imagination winging to unending heights, following the eagle that was Monituperal. His mind soared into a dawn of misty understanding.

"So, my friends," continued Monituperal in a more natural voice, "our sorrow over the end of mankind in the solar system must be modified by that sublime philosophy. It has been the philosophy of my people ever since the numbing realization of our unconquerable extinction came upon us thousands of 'years' ago. It has enabled us to face the doom with unquailing spirit for, after all, we are but a stepping stone. We in ourselves are nothing of importance to the cosmos; only in relation to brethren civilizations do we have a significance. Life will go on without us.

"And now, my brothers from the Dawn, we will part for the time being. Do not let your spirits be depressed by these crushing revelations; there is much left in life . . . . if one can but forget death. After you 'sleep' and allow your minds to file away what I have revealed of our life, I will tell you the fascinating Story of Mankind in the solar system. I have placed in your 'bedroom' an instrument for your diversion in case you lack for something to occupy your time. It will picture for you, at but the suggestion of a thought, any body of our solar system at any distance. Come, hold my hands."

Monituperal had arisen from his chair. Coincidentally, the spherical object above them had vanished, much to Boswell's astonishment. Then, holding their leader's hands, they were whisked back to the room that had become a sort of permanent 'bedroom' for them.

Monituperal's face had again assumed its unusual lack of expression except for that subtle tinge of sadness for which the men from the past now knew the reason. He attempted a half-smile as Boswell stumbled a bit when their headlong flight ended abruptly.

"You find our methods of transportation a bit unbalancing?"

"A little," admitted Boswell. "But very unique and admirable. There is one thing I've noticed, Monituperal, that has puzzled me. Although we are on Mercury, how is it that the force of gravity is like that of Earth? Do you have this whole 'city' under intensified gravity?"

"No, Boswell," replied Monituperal. "Only the rooms in which you are stationed at any time have a greater gravity

for your own convenience. I am afraid that you would get along very badly with Mercurian gravity as it is so much less than that to which you are accustomed. We that live in this age, however, motivate ourselves with a gravity that is even less than Mercury's. In fact, with the absolute control that our 'stomach' machines give us over the force of gravity, we can cause ourselves to skim over a surface at any height without using our limbs. When you are duly initiated into our life, you will see some of the oldest people, who have lost almost all muscular power, floating about with their useless legs hanging limp. Perhaps in your minds you men from a vigorous physical past think of us as degenerate specimens of mankind in point of physique. True it is that, unaided by our 'stomach' machines, we would be puny children in your more powerful hands, but that is unquestionably a minor consideration. Your physical body is a product of crude Nature; my body is a modification of that same body, altered by the easier circumstances introduced by the mind of man. Those same changes brought about by the application of science are not a degeneration, but an advancement. Ancient man used most of his energy in a physical way, starving the brain; modern man uses most of his energy in his brain, giving the body only what is necessary for it to function smoothly and quietly. You will get a clearer picture of the relation of intelligence to its housing, the body, when I tell the Story of Mankind. And now I leave you."

He was gone in a flash, leaving the two men from the past gazing at each other.

CHAPTER VIII

Dead Worlds

● Boswell leaned himself up against one wall thoughtfully.

"Two billion years!" he said as if that thought had been circulating in his mind all that time since they had heard of it.

"Yes, Andrew," remarked Professor Reinhardt in English, finding it stiff and stilted in comparison to the new language they had learned. "It was that many years ago that you and I and . . . . Callahan and Goodwin shook hands and said *au revoir*, and then laid ourselves down in our caskets."

His voice was soft and awestruck. The thought, despite all the other strange things they had learned, could still strike a cold wonder in their hearts.

"You remember the story of Rip Van Winkle?" continued the professor, finding a nameless relief from the pressure of things new and bewildering in the thoughts of a life that seemed far less remote than the mechanical expression "two billion years." His brown eyes sparkled. "How he slept for twenty long years?—and awoke to find a puzzling change in his world? It's ridiculous, isn't it? Twenty years. Two billion years. After all, they are just numbers. He was just as bewildered in the new life as we are in this."

"Rip Van Winkle," mused Boswell, swirling up from a well of deep thought. "Twenty years and he found a change. They *are* just numbers when you stop to think of it. If we had awakened ten thousand years after our burial as we planned, our reaction would have been just as great as here. Only one thing makes this awakening distinctively different than any other awakening—that doom that hovers over human life . . . ."

He shuddered and lapsed into silence. Professor Reinhardt took up the trend of thought. "But we are not to think of it as a doom, Andrew. As Monituperal said, this civilization is but the step in a more gigantic, more incomprehensible, plan of cosmic proportions. Compare that with the philosophy of fatalism of our time: that individuals live and die merely to prolong the race to its ultimate goal which was always clothed in veils of mystery. They are similar philosophies, one grander in scope than the other. Life is but a short flicker, on and then off, all preordained, said the fatalists of our time. Civilization is but a flicker, a flash in eternity, one of many other flashes all

woven into some stupendous plan, says Monituperal. It seems that all human thought in the direction of the Ultimate runs in similar channels."

Boswell looked at his companion with a strangely troubled expression.

"All human thought in similar channels," he repeated slowly. "But that is because we fear the mystery of death and extinction. We hold to such fatalistic doctrines because our view is darkened by the shadow of ever-present death. Isn't it possible that our human conception is wrong —warped by circumstance, colored by delusion?"

"Why, just what do you mean, Andrew?" asked the professor.

"I hardly know myself," replied Boswell reflectively. "But I seem to feel that there is something in human life that has been missed, swept aside. I feel that there is as much importance in individual life as there is in the continuation of the race. After all, continuation of the race is one of Nature's inventions; even the dumb animals had that. But intellect . . . . coming from the outside . . . . why should that need constant reproduction and continuation?"

"Ah, my boy, I see your trouble." Professor Reinhardt was earnest and not in the least contemptuous, nor was there superiority in his voice. "You are young; you have the fire of youth. Youth sees life spread before him and says, 'Mine, all mine for the taking,' but does not stop to think that death will eventually wrest away from it anything it may have taken from life. One drops illusion as one advances in age and experience. About all one can do is pack one's life as full as is humanly possible before the coming of the sleep which knows no awakening in this world again."

But Boswell had lost his trend of thought, vague and undefined that it was from the first. He had seated himself in front of the apparatus which Monituperal had mentioned and looked over it curiously. It was nothing more than a circular screen of some unknown material suspended above the floor at the height of his eyes when seated. Below it on the floor reposed a cubicle affair with no apparent connection to the screen above.

"I wonder how we go about this, professor?" queried Boswell puzzled.

"Monituperal said it would respond to our thoughts," said the biologist, also seating himself.

"Yes, but what particular thoughts—"

A new voice interrupted Boswell. It was Monituperal's, but Boswell felt a slight chill down his spine when he turned to all corners of an empty room.

"I should have explained it more carefully," came the voice from nowhere in particular. "There is a button on the box which rests on the floor. Press that; then look directly into the screen and think the name of any planet or heavenly body you wish to see. In response to your thoughts, it will picture that body from any height, motionless or moving over its surface, as you please. If you have any trouble, just call my name. I am in direct connection with you."

Recovering from shocked surprise, Boswell bent over to press the button. Then he motioned to the elder man to continue with the novel entertainment.

Professor Reinhardt fastened his gaze on the screen which now glowed faintly and gave them the dizzying impression of looking into a hole in a bottomless void. Immediately the room shrouded into absolute darkness and the screen leaped to life. In a panorama of bright stars swam a glowing ball of faint green. It was much drabber and more shadowed than the ancient moon of long ago had appeared from Earth, but of about that size. The picture wavered and faded, then flicked out suddenly.

"Took my breath away," gasped Professor Rienhardt in explanation, blinking his eyes in the suddenly lighted room again. "But I think I can carry it through if I try again."

Darkness dropped around them again, and on the screen appeared the same scene. For a moment it wavered, interposed with the gray shapes of other bodies that

whirled by with startling suddenness, then cleared to crystalline sharpness, like the focusing of binoculars.

"Got it now," came in low tones from the professor. On the screen the darkly shining planet began to grow at an amazing rate. Larger and larger it became till it filled the screen and they could see the details of its surface. As if they were in a space-ship, the image swung flat so that they seemed to be paralleling the surface. The scene rolled underneath them evenly for a time, then abruptly stopped. In another moment it swung ponderously sideward, shifted in the opposite direction, increased to blurring speed, and then slowed to an easy pace.

● Boswell heard the professor chuckle in satisfaction and realized that he had been experimenting to get himself familiarized with a magical control of the images. As the scenery rolled downwards leisurely, Boswell involuntarily shivered at the picture of lifeless frigidity. An endless desert of dimly lighted barren reaches, tufted here and there with a whiteness that might be snow, shocked his eyes in drab monotony. A low range of smooth hills dipped into the scene, bare and sending dense black shadows in one direction. Beyond these a monstrous gash in the ground came to view, raw and painful looking as if a titanic sword had slashed from the heavens. Past this shuddery sight the ground sloped gently into a huge depression whose surfaces were gashed with many of the cracks, some large and sharp-edged, some small and smooth-walled. Then more hills loomed into the screen, predominating the landscape for a long stretch. These were replaced again by flat deserts whose sands glinted like broken glass in the dim light that suffused the place. Nowhere were there rivers, lakes, or oceans, nor was there vegetation of any sort. Not a vestige of anything resembling human habitation appeared in that endless expanse of deserts and low hills and mutilated plateau lands.

Boswell had a sudden forewarning. "Is that . . . . can it possibly be . . . . Earth?"

"Yes, Andrew," assented the professor. "That is the same earth we lived on two billion years ago when it was a young world of immense oceans, growing trees, flowering plants, wild animals, and warring humans. Now it is a gray waste of undisturbed desert and bleak steppes, practically airless and waterless. The mountains we knew, tall and majestic, are leveled to low hills; the forest lands are barren; and all that remains of the oceans are the depressions that were once their muddy beds. Of civilization there is not a sign . . . ."

They watched the image with an intense fascination only natural to persons who once knew the place as a world of sunshine and life. The feeble rays of the dying sun fell more like the ancient moonlight they knew on the scene, although it was broad daylight in that region.

"Nothing is the same," remarked the professor softly. "The continents of our time changed their shapes long before the waters evaporated into space. The rivers must have changed their courses, shifting centers of population, and lakes must have dried up and appeared in new places as the ground rose and sank, as the surfaces of a world constantly do throughout the ages. Perhaps the North American Continent settled to become a new ocean-bed as the ages passed, and new lands arose in what we called the Atlantic and Pacific Oceans. How many times the world changed its face after we left and before the sun died to a coal we will never know, Andrew. How many times civilization moved or was partially destroyed is also a question never to be answered. Even Monituperal, with all he may know of the dim past, cannot know that. And the cities we can remember—great New York, Chicago, Boston, Berlin, London, San Francisco, Paris—have long since been scattered as the molecules of which they were composed, into the air, ground, and space."

In sickening monotony, the bleakness of a dead world rolled across their vision. The deserts were as flat and smooth as a

sheet of iron, the hills as uniform and rounded as artificial molehills. And the deep, painful looking gashes which were present almost everywhere seemed like the death wounds of Mother Earth, from which her life's blood had long ceased to flow.

"It doesn't seem like earth at all," whispered Boswell sadly. "It is more like my conception of what Pluto or a transplutonian planet would resemble. Time has been a plunderer. It has killed a world . . . . and soon it will end the activity of a splendid civilization. I just wonder if that was meant to be . . . . if Life is meant to end in Death . . . ."

But Boswell had allowed his voice to trail so low that his companion did not hear the last sentence. The professor had switched the position of the image so that they seemed to be high above the earth. The entire daylight hemisphere appeared in the screen.

"Those deep rents and gullies, Andrew," said the biologist, "are the signs of Earth's death-throes, before she gave up the ghost entirely to become a cosmic corpse. It looks as if there must have been a titanic upheaval, probably comparatively recently. I presume civilization by that time had moved elsewhere or it would have been destroyed utterly. Now let's take a glimpse at the moon."

Even as he spoke, the image of dark Earth was replaced instantaneously by a smaller, somewhat brighter object that approached them like a huge bomb. As it loomed large in the screen, Boswell exclaimed with pleasure.

"Well at least the moon is still recognizable. There are the craters, mountains, and radiating pole-lines that have always been there. Only its surface too is badly cracked and jumbled up in places."

"Yes, it's much the same moon of old," agreed the professor. "Most of its topographical alteration took place long before man appeared on earth. It has merely given a few last heaves and shudders since then. But there is no one to mourn the moon as we mourn the earth. I doubt that it ever harbored rational life. Its sole purpose, it seems, was to light the night skies of man on earth, and to fill his mind with some of the vague beauties of emotional life. Much that was man's spiritual life was influenced by the sight of that orb in the sky as it used to be; a bright, majestically moving globe, shedding its soft silvery rays on rippling water, on verdant foliage, or through leafy trees. But distance lends enchantment; from close up it is an ugly scene of sharp-shadowed, ragged detail. No doubt in the ages following the twentieth century, the moon was visited quite often once space-vehicles had been made. But man has left no trace, no sign . . . . if there were any, time has wiped them out."

As the professor finished speaking, the moon vanished to be replaced immediately by a heavenly body that shone perceptibly brighter than earth had. The image neared rapidly, then swung flat and slowly rolled across their vision.

"Venus," breathed the professor.

● Although a succession of deserts and low hills greeted them in endless profusion, yet there was something characteristically different about it than the same scene on earth. There was noticeably more of the hilly regions, and the depressions that marked the beds of former oceans were far deeper. The desert lands were less deserts than steppes that had long ceased to bear life for lack of water. But on the other hand, the gashes and cracks in the dried ground were innumerable and stupendously large, sometimes half filled with the remains of a gigantic range of fallen and undermined mountains.

"Venus seems to have passed through a particularly cataclysmic anguish of death," remarked the biologist, "more so even than earth; due, I presume, to the greater quantity of water on this planet. Most of these topographical upheavals are caused by the unnoticed union of water and the molten inner parts of the planets. The expansive force of steam as we used it in our steam-engines, multiplied a million-fold, caused much of that before our eyes. Then notice

that there is still considerable water left here on Venus; in some places there is actually a blanket of light snow. But it has lost its air just as completely as Earth; you can see that by the denseness of the shadows of the hills and their sharp outlines."

For a while they watched in silence. Then Boswell clicked his teeth.

"Wait a minute, professor. Make it turn back slowly. I thought I saw something . . . ."

The image obediently swung backwards and finally stopped as Boswell exclaimed, "There it is. See it, professor?"

The ground leaped toward them and they found themselves poised a few hundred feet above a colossal stone figure of a man with arms upflung and a perfect expression of mental agony on his face. In form and physique he was a prototype of Monituperal except that his arms and legs were more muscular. In one hand, resting on the palm, was a delicately carved globe that puzzled them till in a flash Boswell recognized it as Earth. The other hand held a much larger globe that glowed dully in the gloom around the figure. Around the feet of the colossus reared a mixture of richly detailed architecture of a type that was foreign to their eyes.

"A monument to civilization that must once have thrived here on Venus," voiced the professor in awed tones. "Probably the pre-Mercurian era."

For long moments they gazed at the figure that stood out clearly against the drab surroundings, their hearts throbbing sympathetically each time they looked at the mute despair and agonized sorrow shown in its face. It told only too clearly of the last farewell to a world that had sheltered civilization for countless ages.

"Let us see Mars," said the professor softly after a time.

The size of a ruddy orange, Mars replaced the scene of lifeless Venus. It proved to be even more desolate and lonely than Earth in appearance. Never possessed of large bodies of water, it had passed into lifelessness much more quietly than the other two planets. It presented to their eyes an exasperating monotony of smooth desert and rolling plateau, marred only here and there by the scars of surface splitting. Far more numerous were broad lines of a brilliant white stone set flush with the ground.

"There are the so-called 'canals' of Mars, Andrew," commented the biologist. "Maybe they were meant to be canals, or rather pipes; or they may have been constructed for some other purpose of which we can conceive nothing."

"There is something odd about them . . . . I mean about their being here," said Boswell thoughtfully. "Monituperal called earth the 'cradle of civilization.' Yet even in our day we saw these 'canals' through our telescopes. Who, then, built them?"

"That is a question we must set aside until Monituperal tells us the Story of Mankind," remarked Professor Reinhardt. "As there doesn't seem to be anything of particular interest on Mars, I suggest a little excursion out to the major planets."

"Good!" exclaimed Boswell enthusiastically. "Just the very thought of those distant and little-known planets and their numerous moons has always thrilled me. I often longed to visit them back in our other life, with a wistful and hopeless longing. But now . . ."

Already a new image had replaced Mars. It was Jupiter, but a Jupiter that was as different from the old one as earth had been from its old self. It no longer had a blanket of thick mists, nor the great red eye, nor the belts and bands that had marked it so unmistakably in earthly telescopes. It, too, was cold, surrounded by intense gloom which was only lessened by the diffusion of starlight in the scant atmosphere that it had managed to retain through the ages. But no living thing, neither plant nor animal, survived on its frozen surface. It was a dead world—the Titan of the dead worlds of the dying solar system.

They took a glance at each of its nine moons, out of curiosity, and were sur-

prised to find several isolated ruins on the larger ones. They were mainly the collapsed walls, sometimes metal, sometimes stone, of apparently large structures.

"I think I can explain that," said the professor. "The reason ruins survived here when they disappeared on Earth and Venus and Mars is because they were never subjected to the wear and tear of the elements. These little moons, like our moon, never had a telling atmosphere so that structures would be free of the age-long winds and rains that battered similar buildings on the inhabited planets to dust."

Saturn offered the biggest surprise, however. His magnificent rings of a bygone age were no longer there. Only a few scattered rocks and tiny planetoids circled him in the plane that used to carry the millions of ring particles. Farther out, his ten moons still plied their endless courses, dead and bearing ruins like those of Jupiter. Uranus, Neptune, Pluto, and three trans-plutonian planets were terribly dark and dreary so that the two explorers took but a hasty glance at them.

Then Professor Reinhardt switched the picture from the last planet to Earth in the wink of an eye, a distance that would take days to travel at the speed of light. The image of Earth seemed to melt right into the screen and then the scene swung in an arc to reveal the starry sky.

"We are now 'standing,' so to speak, on Earth in its perpetual night hemisphere in a northern latitude, Andrew," said the professor as the sky locked into place. "The sky we used to know . . . . is . . . . no . . . . longer."

True it was. Not a star could they recognize, so astoundingly mixed up were they. The Big Dipper, well-known constellation of other days, was lost forever. All the other constellations were also absent; the stars had completely rearranged themselves.

"This is the first thing that has really brought home the fact that we are actually two billion years removed in time from our former life on Earth," said Boswell timidly. "When stars leave their places . . . ."

He stopped with a catch in his voice. Measured by that cosmic time-piece, a blinding realization of what a long time had passed since they had left their friends staggered his mind. Professor Reinhardt was also numbed by the thought and hastily switched the scene away from Earth.

Into their vision leisurely floated the sun. Again they looked silently upon its image: a gigantic, barely glowing cinder in the blackness of the void. Only in spots was it anywhere resembling in brightness the sun of yore, seething spots that yet defiantly poured out radiant energy, the last dying gasp of a succumbing sun. The rest of its surface, already a crust of solid matter, radiated a mere dull-red glow. Around the whole globe hung a thick veil of mists and swirling gases.

"Our sun," intoned Boswell. "Our sun . . . ."

(Are Boswell and the biologist destined to be among the last of the human race? Read the absorbing conclusion to this masterful novel in the next issue.)

Something To Look Forward To!

Our next two serials will be another foreign novel translated by Fletcher Pratt:

"THE HIDDEN COLONY"

by OTFRID von HANSTEIN, starting in our January issue, and:

"IN CAVERNS BELOW"

by that old favorite, STANTON A. COBLENTZ, the first installment to appear in WONDER STORIES for March, 1935.

THE ALIEN ROOM

By W. P. Cockroft

(Continued from page 781)

Wilde turned sobbing as the wind and the snow smote him, and made his way back to the camp.

The natives brought him back to Darjeeling, where he died after making the notes in his book.

It is easy to imagine the course of events from the beginning. Somewhere on one of the other planets, someone had built a space-ship to reach Earth. They had succeeded in reaching Earth; the skeleton was that of the traveler who had succeeded, only to land on the inhospitable Mount Everest, and open the door to be frozen to death.

How long it had been there before the party found it cannot be ascertained; it may have been there for decades. The fate of the exploration party seems certain. The door was open and they would die almost immediately. If by some chance they managed to close the door in those few breath-taking seconds before the ship reached space, they would suffocate. The possibility of their finding some air-storage on the space-ship before death overtook them is incredible. Even allowing for that, it is certain that there was no water in it, nor was there food.

Perhaps the ship would reach another planet, perhaps the very one from which it had come, and if so, we may expect another visit from the inhabitants in the near future. They would be surprised when it landed and they found the remains of the Earthmen inside.

If they land in a more hospitable part of the world than Everest and the air is breathable for them, we shall have an opportunity of seeing them.

Behind the door that Brett and Moyston imagined led to an underground city was the room from which the forces that ejected the ship would be fired.

THE END

THE MOTH MESSAGE

By Laurence Manning

(Continued from page 821)

he has more than enough money for his needs, and to this he agreed listlessly. Now so much is all very well—wait for the rest of it.

"I asked him then how much gold there was and he pulled from his robes a tile tablet and consulted it a moment. Thirty-three 'Cog-drach' was what he made it. And a Cog-drach? As nearly as I could understand him, about the weight of *one thousand men!* Do you understand, old man? Billions of dollars' worth of gold! Enough to end this depression as suddenly and completely as when half a century ago the gold strikes in California and Australia startled the world and caused such a long period of rising prosperity as the nations had never before imagined!

"So you see that this adventure of ours is not over. I shall need help from all three of you. There's all that gold to be got together and transported to the assay office and when the money is in hand, we must get it distributed. Where? I don't know. I might use a million myself, but that would be my limit. Well, think it over. We'll be back in New York in about a month.

"Val-Bel sends her love and hopes that your hand is better.

"Your friend,

"La Brot."

THE END

HOUSE OF MONSTROSITIES

By Edsel Newton

(Continued from page 807)

finally tired of the flesh of their fellows.

They came toward the cage and looked up at me.

They were lighter in body and could climb. They had escaped the greater one because of their ability to spring quickly aside. And now, foot by foot, they were gaining the top of the cage and I could retreat no farther than the wall. Did one reach the top of the cage, I would have been doomed. I searched the thin layer of dust in an attempt to find something with which to defend myself. One of them stuck a hideous front claw over the side and emitting a whine, pulled itself up until his head appeared. He seemed eager in anticipation of tearing me to shreds. His eyes gleamed and his jaws were open in a snarling charge.

Presently, my fingers closed upon a piece of newspaper. Somehow, I connected this with the thought of fire. I produced a match from my pocket and touched its blaze to the paper. This I thrust at the nose of the monster. He leaped back and struck the floor, crushed of bone and muscle. The others leaped upon him, rending his body in the instinctive quest for blood. They mangled the carcass and then were silent as they groped about the room.

I lay there upon the top of the cage in a daze, wondering how I could escape. I wondered, too, how the beast had made his way from the scene of the killings without having been observed. Yet, he could have hidden in the park. He had returned to the only home he had ever known, even to remain about in the rear until I met him at the hole. And now, he sat near the door, very still, apparently asleep. Though in oblivion, he was hideous, grotesque, horrid.

A key clicked in the lock.

The Japanese houseman darted in with a platter of raw meat in his hands. He had not been prepared for the surprise that awaited him. He suddenly dropped the platter and started to run. One of the monsters reached him and bore him to the floor, slashing his body open. Then I saw Stancliffe Podge standing in the doorway. The Japanese was screaming, and Podge started to draw a revolver. The great one, sitting near the door, suddenly sprang forward. With one sweep of his great arm, he gathered his master between his claws. There was an agonizing cry and I turned my head and all my powers were gone. Then I awakened to see the beast pulling Podge's arms from his body. One of them he flung at me as I sat there stupified and motionless. I saw it as it fell at my side. It was Podge's right arm and hand, and it still held the revolver. Then I was fighting, fighting the mad fight of those beasts. I was shooting at the great brute as he tore the body of my friend to shreds and gore and strewed it over the floor of the laboratory.

Darkness came upon me. Years passed, it seemed. I crept into light again, this time in a white-clad room with nurses and doctors about me. Weeks went by before the stunning horror of the beast was removed from me. When my wits returned, I learned of how I had emerged from the house of Stancliffe Podge holding a smoking revolver. But I am not the same man. I am older and graying at the temples. An hour in the house of monstrosities took away my youth.

THE END

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THE WATERSPOUT

By Eugene H. Scheftleman

(Continued from page 837)

short distance remaining. The ship struck with a splintering crash and almost immediately began to fill with sea-water. Teeth chattering, I threw open the emergency port overhead and climbed out. I found the passengers already crouched on the cabin roof, fighting for room on the narrow cat-walk. I took one of the men aside.

"Listen," I said, "I'm going to swim for that berg. I can climb on top of the thing and get a pretty good view of the surrounding area. Here's a set of flares. If I wave my arms, you shoot one straight up. There should be an ice-patrol boat somewhere in the neighborhood."

He nodded agreement and took the flare pistol and extra flares. I held my breath and dove overside. The water was icy-cold. It took all my strength and skill —I am considered an excellent swimmer —to reach the berg. When I finally struck the icy mass, I dragged myself wearily from the water and started to climb. The ice was slippery and the way precipitous. It took me almost half an hour to climb to the top, although it couldn't have been more than a hundred feet high.

Shivering in my wet garments and exhausted by the ascent, I finally reached the top and turned to look at the plane, a quarter-mile away. I gasped in horror. It was surrounded by a wall of licking flames. Tiny black figures dove into the water from the cabin roof to bob up and down a few times and disappear beneath the waves. I could do nothing except watch in pity and curse my own stupidity in giving the dangerous flare-pistol, with its highly inflammable contents, to a nervous passenger. After a few minutes, the flames burned down to the water and the charred metal hull sank out of sight, the bony framework of the wing, supported by the empty gasoline tanks, floating on the surface. Here and there, a few black dots were tossed about by the waves, struggling frantically. None of them ever reached the iceberg.

* * *

De Marillo paused, breathing heavily.

"I was saved—I, who least deserved it. A party of Eskimos hunting for seals found me babbling like a maniac and took me away. For a year, they clothed and fed me and I lived in their igloos. Then a sealing schooner picked me up and I got back to the States. Since then, I have worked in road gangs and laboring crews, always living in fear of recognition. The relatives of those poor passengers—the mother of the little child—McCoy's little wife—I would rather die than face them. Finally, it began to prey upon my mind. I see their faces in my dreams—pointing at me—shouting 'guilty! guilty!' They stare at me out of the eyes of people passing in the street. I tell you, I can't stand it! I would have killed myself long ago, but I haven't got the courage."

He broke off and sank slowly back on the pillow. His eyes stared off into space. Presently, his lips moved and I bent down to catch the words.

"Tell me, Hartwell," he whispered, "Am I guilty?"

Thoughtfully, I regarded him while his eyes pleaded dumbly for solace.

"No, José."

His eyes closed and his lined face broke into a tired smile. "Peace—" he sighed.

A tear stung my eye; I turned blindly and went out.

THE END

Science Questions and Answers

THIS department is conducted for the benefit of readers who have pertinent queries on modern scientific facts. As space is limited, we cannot undertake to answer more than three questions for each letter. The flood of correspondence received makes it impractical, also, to print answers as soon as we receive questions. However, questions of general interest will receive careful attention

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Neutronium

Editor, SCIENCE QUESTIONS AND ANSWERS:

In the October, 1934 section of this department, a reader asked about neutronium—if there was such a substance in the universe: where, if so; and if it was considered an element. The reply given was that "the supposed neutronium is not an element."

Now in the January, 1929 issue of the stf. publication formerly Mr. Gernsback's, in foreword to a story titled "Absolute Zero," the editor wrote: "Neutronium: this *element* (italics are mine) weighs some 60,000,000 tons per cubic inch. The minimum density of solid neutronium is four trillion times that of water."

I have been rather interested in neutronium since first reading the "Absolute Zero" story, and wonder just what is what. It seems that there used to be more information on it than at present. Have you anything further?

FORREST J. ACKERMAN,
San Francisco, Calif.

("Neutro" in Latin means NOT in one of its senses; NEUTRAL means taking neither side; NEUTER means neither one nor the other. NEUTRONIUM, the word itself, sets the ELEMENT in a class of its own. ELEMENT, in this case and the one used by Mr. Gernsback in 1929, is used in its broad sense, not the narrow one. Fire, air, earth, and water are known as the four ELEMENTS; the repeal of prohibition was an ELEMENT of President Roosevelt's platform. Funk and Wagnalls' Dictionary says that an ELEMENT is "a component or constituent; ingredient, rudiment." Only in chemistry does ELEMENT mean one of the ninety-two known forms of matter which cannot be decomposed by any known means. The element is the start. The Elementary School is where you start your education. When learning any subject in college, you first study the ELEMENTS. In chemistry, before you have compounds, you must have ELEMENTS, the basis of everything in existence.

Therefore, neutronium is not an ELEMENT in the chemical sense, though it is in the broad term. Every one of the chemical elements is made of atoms, in which the free electrons are as far apart comparatively as the stars of the universe. Some elements have only a few free electrons, the gases; while others have many dozens, the heavy metals. Now, if you take all of the parts of the atom and CLOSE THEM INTO ONE MASS, doing away with the spaces between them, you have what is known as NEUTRONIUM. You know how heavy a piece of lead one foot square is. You would have trouble in lifting it. However, only an infinitesimal part of that heavy metal is actual matter. Most of it is pure space! Now try to imagine how heavy a piece of matter would be that was ALL matter, with no spaces between the atoms. It is beyond our comprehension. It could not exist upon the earth. It would sink right through everything to the core of the world.—EDITOR.)

The Plane of the Planets

Editor, SCIENCE QUESTIONS AND ANSWERS:

Could you tell me if all the planets are on the same plane or level in relation to the sun?

If possible, show a diagram with approximate levels of planets.

ALAN KRAUT,
Hackensack, N. J.

(All of the planets are on the same plane with the sun, with very minor variations, except the asteroids, which stretch over an immense portion of space between Mars and Jupiter, separating the inner planets from the outer ones. It is very possible that the asteroids, also called planetoids, or minor planets, were once but a single sphere, which, if in accordance with the rest of the solar system, was in the same plane with the rest of the planets, but through some cosmic catastrophe was disrupted into many thousands of pieces and thrown out of alignment.—EDITOR.)

The Rainbow

Editor, SCIENCE QUESTIONS AND ANSWERS:

If I'm not in any way troubling your peace and contentment, I'd like to voice a question or two.

First of all, what is the rainbow made up of and why does it appear only on a few occasions? Where does it extend from? Does it extend by any chance from sea to sea or does it circle the earth?

The way I figured out this question was that since it appears only after a good rain, I thought maybe these rain particles were somehow formed into a large sheet, like a pane of glass, thereby letting the sun shine through it. You might wonder where in the sam-hills did I get such a dumb idea. Well, it wasn't till I looked through a prism that gave me the idea.

Sometimes I often wondered if a rainbow was ever seen during the night.

ALEXANDER NOVAK,
Trenton, N. J.

(In the first place, a rainbow is only an illusion—it is not an object, but the reflection of the sunlight on raindrops. After a storm has passed, during the day, the sun shines on the precipitation miles away, the spectrum is broken up by the prismatic effects of the rain and reflected to your eyes in beautiful colors. There is no "foot" to the rainbow. You could not stand at its "foot" any more than you could stand at one of the "four corners of the earth" and fall off the edge. You have heard the old legend about the pot of gold at the foot of the rainbow, which, of course, would be as useful to search for as the Fountain of Youth, which Ponce de Leon once hunted in Florida. If you flew toward a rainbow in an airplane, it would gradually disappear as you drew closer.

Occasionally a rainbow, very faintly, is seen at night, caused by the reflected sunlight from the moon. This is a very rare phenomenon.—EDITOR.)

The Moon and Mars

Editor, SCIENCE QUESTIONS AND ANSWERS:

I wish to ask a few questions.

1. Please show a map of the moon with the lunar landscape and the dimensions of the plains, craters, and oceans.

2. Give the lengths and the widths of the most important "canals" of Mars, and the area of some of the plains and oceans.

3. What are the colors of the moons of Mars, Jupiter, Saturn, Uranus, and Neptune?

LEON STOPPER,
Chester, Pa.

(1. On this page you will find an illustration showing one hemisphere of the moon naming the most important geographical points of interest: craters, seas, etc.

2. Lowell has given some rough estimates concerning the lengths and widths of the most important canals of Mars, etc., though they cannot be called very accurate because of the distance of Mars from the earth; only an object of great dimensions could be measured even with a micrometer. The estimated figures so far are of little value to science.

3. Very few of the moons of Neptune and Jupiter appear as disks in the telescope, the rest showing themselves merely as points of light—this goes also for the satellites of Mars, Saturn, and Uranus. They only reflect the light from the sun and show no coloring.—EDITOR.)

Intelligence in Ants

Editor, SCIENCE QUESTIONS AND ANSWERS:

Everyone has read all about ants, bees, and termites, and how they co-operate. I can't see how such tiny creatures could have brains, in our sense of the word, but there must be some explanation for it.

JUAN DIAZ,
Mexico City, Mexico.

(Ants, bees, and termites do not have intelligence the way we define the word. They have what could be called socialism. Their co-operation is probably the product of ages of development and evolution, brought about by necessity and environment. Every animal has its instincts, and it seems as though the instincts of the ant, bee, and termite are just more finely developed. Some of our authors choose to think of a central intelligence guiding the actions of these creatures, by some kind of telepathy, but that theory, though perhaps logical, is altogether too fantastic for cold-fact science until some proof is brought on.—EDITOR.)

How Far We Can See

Editor, SCIENCE QUESTIONS AND ANSWERS:

I have heard that the farthest object capable of being seen is a galaxy 150,000,000 light years away, with a telescope. What's the farthest object capable of being seen by the naked eye?

RAYMOND PEEL MARIELLA,
Philadelphia, Pa.

(The nebula of Andromeda, which is about 900,000 light years away, can be seen with the naked eye and is about as far as can be seen without a telescope. Everything depends upon brightness. If a nebula some 500,000,000 light years distant should suddenly flare up bright enough, we could see it with the eye. Of course, this flare-up would have occurred 500,000,000 years ago, though it does not reach our eyes until now, the light speeding at the rate of 186,000 miles per second between the nebula and the earth for that immense length of time. In other words, there is no law of nature that prevents us from seeing much farther than the nebula of Andromeda. It just so happens that very little farther is of sufficient brightness to affect the human eye.—EDITOR.)

The SCIENCE FICTION LEAGUE

—a department conducted for members of the international SCIENCE FICTION LEAGUE in the interest of science-fiction and its promotion. We urge members to contribute any item of interest that they believe will be of value to the organization.

EXECUTIVE DIRECTORS:

FORREST J. ACKERMAN
EANDO BINDER
JACK DARROW
EDMOND HAMILTON
DAVID H. KELLER, M. D.
P. SCHUYLER MILLER
CLARK ASHTON SMITH
R. F. STARZL

HUGO GERNSBACK,
Executive Secretary

CHARLES D. HORNIG,
Assistant Secretary

SCIENCE-FICTION fans have often brought to our attention the fact that there is nothing quite so enjoyable as conversing with other readers of fantasy. They have so many things in common and never run out of things to talk about. You should really get into a group to get the full benefit of science-fiction and insure unity among the fans. Therefore, we urge you to join a Chapter if you have not already done so, if you are a member. If you are not yet a member of the LEAGUE, you can join very easily, merely by sending to Headquarters the coupon printed in these pages. So turn to the paragraphs in this department captioned "Chapters." Pick out the Chapter nearest you and write to the Director telling him that you would like to join. Everyone should eventually belong to some Chapter. They are spread all over the world. If there is not one near you, you may start one yourself by following the directions outlined.

JOHN DOW A PSEUDONYM

Not long ago, we received the following letter from an interested person:

"In the August issue of WONDER STORIES I came across a page advertising your LEAGUE. On the illustrated certificate on that page was the name 'John Dow.' I could not decide whether you had just 'hit' upon the name, or whether it (the certificate illustrated) is a facsimile of one of your member's certificates. I would be grateful for information on the above.—Lawrence Dow, Altoona, Pa."

John Dow, or John Doe, is used as a pseudonym for an anonymous person wherever necessary. It is also used when a name is needed as an example, informing others how, or where to sign their names. John Dow is purely fictitious. Richard Row is used for these purposes also, and Jane or Mary Dow or Doe for a woman. We have no member by the name of John Dow.

WRITING TO OTHERS

Lionel Dilbeck of Wichita, Kansas, Member Number 447 of the LEAGUE, asks us the following questions

"1. Are LEAGUE members to use the LEAGUE stationery only in their correspondence with other members, or can they use it in all their correspondence?

"2. I notice that members are not to write other members unless these other members have asked for correspondence. Does this apply to letters inquiring if persons have back numbers of stf. magazines for sale? If so, how are we to know if the person we write to is a member or not, as you do not furnish us with lists of the members?"

Answer to Number One: Members are advised to use the LEAGUE stationery for all their correspondence, if they wish. It is a good way to advertise the LEAGUE and secure new members. Of course, all correspondence between members should be on LEAGUE stationery, though it is not necessary if the member does not feel that he can afford to purchase it.

Answer to Number Two: The LEAGUE wishes to hamper correspondence in no way, rather to encourage it. We make no restrictions in writing between members or members and outsiders. The point we mean to bring out is that members who receive correspondence from others whom they did not ask to write (according to specifications) do not have to answer it if they find themselves burdened. They are obligated only to answer mail sent from persons following the descriptions published in the correspondence columns. The rules of the LEAGUE are very few and lenient.

COÖPERATION FROM IDAHO

"The *Lewiston Morning Tribune* hasn't a very large circulation," writes Stuart Ayers, Member Number Sixty, from Lewiston, Idaho, "area of about three-hundred miles—but still I think the short editorial I just had printed in it will convert at least two or three persons to science-fiction—anyway, they may 'give it a whirl.'"

And here is the editorial, entitled "Science-Fiction Commended — Neglected Type of Literature Is Educational and Entertaining."

"To the *Tribune*:

"This is simply a means of acquainting whoever may read it with a type of literature that is not very popular among the vast majority of the people. I refer to science-fiction.

"On the newsstands today, there are scores of magazines—western stories, love stories, war stories, sex stories, human-interest stories, and all types of adventure stories. I believe among the slightly thoughtful classes, detective and adventure fiction are read mostly for relaxation.

"The purpose of all fiction is to entertain, it seems; science-fiction both entertains and instructs—it is not hard to take, it is the most imaginative, and the easiest to read. In science-fiction an author may combine the qualities of every worth-while type of story, if he so chooses, and thus create a masterpiece. There are few science-fiction magazines on the market today, but what those few do print, is the best.

"Most everyone must have heard or read of the recently published, 'When Worlds Collide'; that was science-fiction, and it was good science-fiction, though the authors stressed the human interest considerably more than science. Jules Verne, H. G. Wells, A. Merritt, Edgar Allan Poe, and many other writers famous in the world of good literature have written science-fiction. They realized the opportunities of well-applied imagination.

"'Give it a whirl.'"

We especially appreciate this effort of yours, Mr. Ayers, because you bring out the very important point that science-fiction is educational and therefore has

a place above all other fiction. You are an ace member. Which gives us an idea We here give every member who has had editorials or letters printed in newspapers concerning science-fiction or the SCIENCE FICTION LEAGUE permission to call themselves Ace Members. Use this on your stationery. Stuart Ayers and John S. Shounder are Ace Members. Give the SCIENCE FICTION LEAGUE public notice in your local newspaper and become an Ace Member. Members who do anything else which we believe of equal value will also be allowed to call themselves Ace Members. Inform us if you believe yourself eligible.

SCIENCE FICTION DEGREES

You will remember that Alvin Earl Perry, Member Number 355, suggested in our October issue that degrees be offered to members of the LEAGUE upon the completion of certain tests. In that issue we asked all those interested in the idea to cast their votes. Thomas S. Gardner of Johnson City, Tenn., Member Number 357, elaborates on the subject:

"The conferring of a degree in science-fiction implies more than a mere acquaintanceship with the field of fiction. It also means that the degree may be conferred only on one who has in addition a liberal education, and honest belief in the benefits of science fiction, and a character to support it.

"Therefore we confer a degree only on candidates who pass certain rigid requirements. These degrees may be conferred as honorary, but in all cases must be so specified. The ability to earn a degree is a sign of scholarship, open-mindedness, scientific attitude, in addition to the prescribed interest and knowledge of science, logic, and science-fiction.

"Requirements for degrees. Bachelor of Science-fiction: This degree is conferred only after passing a comprehensive examination covering the following points:

"Part One. Answer correctly at least 70% of a list of questions dealing with all science-fiction published since 1900.

"Write a thesis, or theme, based on science-fiction. This thesis, or theme, must be accepted by the executive board of the SCIENCE FICTION LEAGUE as being original, instructive, and interesting.

"Part Two. Answer correctly with a minimum grade of 70% a comprehensive examination covering the following subjects: Natural Science, i. e., biology, botany, and related fields, psychology, logic, mathematics, prehistoric science, history, comparative religion, and the field of Pure Science, as physics, chemistry, astronomy, etc.

"These questions cover knowledge that may be obtained from reading popular science and science-fiction. Being a member of the SCIENCE FICTION LEAGUE is a prerequisite.

"Master of Science-fiction: The possession of a Bachelor's degree in science-fiction is a prerequisite for candidacy of the Master's.

"Requirements: Have at least one story published in one of the leading science-fiction magazines. Support at least one of the Science Fiction Fan Magazines who are doing so much to disseminate science-fiction. Do something that in the opinion of the Executive Board has furthered the field and benefits of science-fiction. The degree of Master of Science-fiction is an indication of achievement in addition to knowledge.

"Doctor of Science Fiction: Since science-fiction is intimately connected with the whole field of civilization and since the possession of a Doctor's degree in science-fiction means the attainment of excellence that denotes supreme effort, it is necessary that we require the recipient to have a thorough knowledge of at least one scientific field, the technical side to be stressed above everything else. The possession of a Master's degree in science-fiction is a prerequisite for candidacy of the Doctor's.

"The candidate must pass a thorough examination in at least one technical field, as physics, chemistry, psychology, electrical engineering, or any field that connotes superior ability.

"The candidate must have had or have published in some non-fiction magazine at least one non-fiction article. This article must deal with a furtherance of human knowledge in some way. At least three character references must accompany the application for the Doctor's degree.

"A minimum charge to cover the expenses of conferring the degree, taking examination, and covering cost of supplies used must be paid by the candidate in advance of the conferring of the degree.

"The Science Fiction University being an extension school, or a correspondence type must insist on these rules and regulations being observed. The receiving of a degree must mean to you the crowning of effort and knowledge. It means something to receive these degrees.

"Note: I have used Mr. Alvin E. Perry's suggestions in this announcement. The originality of the idea goes to him. Express to him thanks from Member Number 357."

We will make a definite announcement in the next issue concerning the degrees to be conferred upon members of the LEAGUE, using some of the suggestions of Members Perry and Gardner. This, by the way, makes Alvin Earl Perry and Thomas S. Gardner Ace Members of the LEAGUE.

A HOME IN THE COUNTRY

"In accordance with one of your suggestions," writes Vernon H. Jones of Des Moines, Iowa, Member Number 364, "I tried my hand at writing editorials to the newspapers. This first attempt didn't turn out so hot, as witness the enclosed clippings The part which I put in about literature, science-fiction, was cut out, probably because of lack of room.

"The reason for my editorial was one in the local paper panning an architect because he believed that a home in the country in the future would be a skyscraper. I borrowed Mr. Gernsback's conception (incidentally, mine also) which appeared in the February, 1931, issue of WONDER STORIES and in your other publications from time to time. I hope you don't accuse me of literary plagiarism."

And here is Member Jones' article as it appeared in the *Des Moines Tribune*.

"I have before me your editorial of Tuesday, August 28, entitled 'A Home in the Country,' and I must say that it strikes a new low in human intelligence and imagination. Maybe it was supposed to be funny, but its humor missed its mark. Maybe you summed yourself up in the last paragraph correctly—if so, I hope you will soon be back plowing the corn fields and watering the cows instead of editing a newspaper

"When we contemplate the future of human beings in the light of the progress in the last century, we assume that during the next hundred years the rate of progress will be the same. If a person in Napoleon's time predicted the wonders to be in the year 1934, he would have been put in an asylum. So, in contemplating the wonders of 2034, the most vivid and most extravagant predictions made at present will no doubt fall far short of actual accomplishments.

"By the end of this century, if the trend continues, we will have isolated single city-buildings in the country, isolated skyscrapers dotting the farm and forest lands all over the country. Each skyscraper, removed from the others by perhaps as much as fifty miles, will be an independent building, a small city in itself, where the farmers will live

"The building will be self-contained, and will contain department stores, motion-picture theatres, hospitals, its own newspaper plant, etc., to take care of the needs of the small community. A large number of these people may be farmers, cultivating the soil, but they will live in up-to-date apartments, in an up-to-date skyscraper, which will be a self-contained city.

"There are many advantages and few disadvantages in such an arrangement and is quite obviously the trend. First came the individual, then the family, the home, the tribe, the village, and then the city. The modern city is slowly spreading itself into the rural districts and there is certainly no reason to think that in time they will not take the form of self-contained skyscraper cities."

This editorial shows that Mr. Jones has a good imagination, so necessary to the science-fiction fan It is certainly too bad that the part concerning science-fiction was cut out of his letter, preventing him from becoming an Ace Member We wish him better luck next time.

BOOK DISCOUNTS

Several members have written in asking how they can secure the discounts on science-fiction books that we said publishers will allow, when the LEAGUE was formed. All you have to do to get these discounts is write to the book publisher, ordering the book (which must be science-fiction) and ask for the discount which you are entitled to as a member of the LEAGUE. Most publishers will heed your request.

YOUR CERTIFICATE

To date, almost sixty-five members have not claimed their certificates, although their applications have been received and approved. The certificate is given free to all those who find it possible to call at Headquarters for it. However, when it has to be mailed, a mailing and handling cost of fifteen cents is charged. We urge you to send in your fifteen cents if you cannot call for your certificate. You will find it necessary to have a certificate in order to enter any Chapter, and for other times when identification is

PAMPHLET OF INFORMATION

We have prepared a four-page leaflet adopted from our editorial in the May, 1934 issue of WONDER STORIES, which outlines the rules and purposes of the LEAGUE, with an application. These will be provided free of charge to those who wish to join and have not already done so, or to members who want to convert others. Please send a stamp to cover mailing cost.

SCIENCE-FICTION MOVIES

If you would like the motion picture producers to make more movies of this type, write to E. C. Reynolds, 3235¼ Descanso Drive, Los Angeles, Calif., stating that you will support all such productions. Mr. Reynolds is making a list of the names sent to him, and when he has ten thousand will submit them to the film magnates as petitions for more science-fiction on the screen. Don't forget to send in your name, whether you are a member of the LEAGUE or not. Mr. Reynolds is Member Number 315.

CORRESPONDENTS

All members are free to enter their names upon this list, telling just who they would like to write to (ages and sex), where they should live, and perhaps what they should be interested in.

This correspondence list is for members of the SCIENCE FICTION LEAGUE and those entered are warned against questionable letters they may receive from outsiders. If your entry does not bring the results you desire, make your next one take in a wider field, either in ages, locality, or hobbies. No entry will appear two months in succession for the same member. By notifying headquarters when the issue appears containing your name, you may have it repeated the second month following, and by doing this every two months, have the entry six times per year. However, you will probably not wish to do this, for you are likely to secure all the correspondents you desire with the first insertion.

Alexander Novak, 921 Hudson St., Trenton, N. J., Member Number 463, would like to correspond with both sexes, all ages, and in all parts of the world, particularly Englishmen.

Vinton Spohn, P. O. Box 806, Van Nuys, Calif., Member Number 458, wants to write to any member of the LEAGUE, either sex, who lives in or near Los Angeles, Calif., between the ages of eighteen and twenty-one.

Molly Acreman, 1805 N. Cotton Ave., El Paso, Tex., Member Number 464, would like to correspond with members of both sexes between the ages of fourteen and twenty in all parts of the world.

Madison K. Tanner, 3440 Askew Ave., Kansas City, Mo., Member Number 360, is interested in corresponding with boys sixteen years old, who are interested in plants and animals.

Eugene K. Dildine, 134 N. Wayne Ave., Columbus, O., Member Number 247, would like to write to those interested in chemistry, biology, bio-chemistry, physics, and radio-activity, also hypnotism of which he is a profound student. He is confined permanently to bed and promises to answer all correspondence.

T. Alan Ross, 389 St. Kilda Rd., Melbourne, S. C. 2, Australia, Member Number 497, welcomes correspondence with other members of the LEAGUE. Here is a chance for those who wish over-seas pen-pals.

Arthur Jones, Jr., 2717 Santa Clara Way, Sacramento, Calif., Member Number 335, would like to correspond especially with collectors of science-fiction and would-be authors.

Robert L. Johnson, 1373 Versailles Ave., Alameda, Calif., Member Number 412, wishes to communicate with members of all ages in and around the state of California on the subject of interplanetary travel.

CHAPTERS

Here is this month's list of volunteers for the directorship of local Chapters of the LEAGUE:

BROOKLYN SCIENCE FICTION LEAGUE (Proposed). George Gordon Clark, 8709 15th Ave., Brooklyn, N. Y.

WASHINGTON SCIENCE FICTION LEAGUE (Proposed). T. J. Mead, 1819 G St., N. W., Washington, D. C.

JERSEY CITY SCIENCE FICTION LEAGUE (Proposed). Theodore Lutwiniak, 172 Pavonia Ave., Jersey City, N. J.

MOLINE SCIENCE FICTION LEAGUE (Proposed). Carl R. Canterbury, 1527 Eleventh Ave., Moline, Ill.

LOS ANGELES SCIENCE FICTION LEAGUE (Proposed). E. C. Reynolds, 3235¼ Descanso Drive, Los Angeles, Calif.

LEWISTON SCIENCE FICTION LEAGUE (Proposed). Stuart Ayers, 1411 Tenth Ave., Lewiston, Idaho.

Application for Membership

SCIENCE FICTION LEAGUE

I, THE UNDERSIGNED, herewith desire to apply for membership in the SCIENCE FICTION LEAGUE. I have read the rules of the LEAGUE, and hereby pledge myself to abide by all the rules and regulations of the SCIENCE FICTION LEAGUE. Enclosed find fifteen cents (15c) to cover the mailing and handling charges for this certificate.

Name .....

Address .....

City and State .....

Country .....

Date .....

(It is important the reverse of this blank be filled out.
No application valid without.)

ERIE SCIENCE FICTION LEAGUE (Proposed). Jack Schaller, 324 East 5th St., Erie, Penn.

DES MOINES SCIENCE FICTION LEAGUE (Proposed). Vernon H. Jones, 1806 Sixth Ave., Des Moines, Iowa.

DENVER SCIENCE FICTION LEAGUE (Proposed). Olon F. Wiggins, 2418 Stout St., Denver, Colo.

LIVERPOOL SCIENCE FICTION LEAGUE (Proposed). Leslie F. Johnson, 46, Mill Lane, Old Swan, Liverpool 13, England.

INDIANAPOLIS SCIENCE FICTION LEAGUE (Proposed). Henry Hasse, 1236 Wade St., Indianapolis, Ind.

CENTRAL TEXAS SCIENCE FICTION LEAGUE (Proposed). Alvin Earl Perry, Box 265, Rockdale, Texas.

SHANGHAI SCIENCE FICTION LEAGUE (Proposed). A. V. Bleiden, 208 Avenue du Roi Albert, Shanghai, China.

PHILIPPINE SCIENCE FICTION LEAGUE (Proposed). J. R. Ayco, Bacolod, Neg. Occ., Philippine Islands.

PHILADELPHIA SCIENCE FICTION LEAGUE (Proposed). Milton A. Rothman, 2500 North Fifth St., Philadelphia, Penn.

SACRAMENTO SCIENCE FICTION LEAGUE (Proposed). Arthur Jones, Jr., 2717 Santa Clara Way, Sacramento, Calif.

BUFFALO SCIENCE FICTION LEAGUE (Proposed). Leo Rogers, 616 Jefferson Ave, Buffalo, N. Y.

STATEN ISLAND SCIENCE FICTION LEAGUE (Proposed). Rudolph Gentsch, 50 Holly St., Dongan Hills, Staten Island, N. Y.

ST. LOUIS SCIENCE FICTION LEAGUE (Proposed). Harold Rice, 4129 Washington Blvd., St. Louis, Mo.

READING SCIENCE FICTION LEAGUE (Proposed). Harry E. Ott, West Leesport, Penn.

SANTA MONICA SCIENCE FICTION LEAGUE (Proposed). Forrest C. Sagendorf, 2708 Wilshire Blvd., Santa Monica, Calif.

OAKLAND SCIENCE FICTION LEAGUE (Proposed). Robert Keith, 771 Fifty-fourth St., Oakland, Calif.

BOSTON SCIENCE FICTION LEAGUE (Proposed). Philip Warren Faden, 303 Fairmount Ave., Hyde Park, Boston, Mass.

KANSAS CITY SCIENCE FICTION LEAGUE (Proposed). Madison K. Tanner, 3440 Askew Ave., Kansas City, Mo.

SYDNEY SCIENCE FICTION LEAGUE (Proposed). Wally Osland, 26 Union St., Paddington, Sydney, New South Wales, Australia.

CHILLICOTHE SCIENCE FICTION LEAGUE (Proposed). Manford R. Norris, 324 Cherry St., Chillicothe, Mo.

ALAMEDA SCIENCE FICTION LEAGUE (Proposed). Robert Johnson, 1373 Versailles Ave., Alameda, Calif.

When a reader would like to become a part of any Chapter, he must first join the parent body, then send in his name and address to the Director (the one who wishes to form the Chapter he wants to join). Such person should live in the district in which the Chapter is located so that he can attend meetings.

If you wish to form a Chapter, let us know, and we will publish the fact. When you have a number of names on your list of those who want to join the local Chapter (wait at least three weeks or a month for these after the issue appears containing your name) send the list to us and, providing all the names are entered as members at Headquarters, the local Chapter will be declared. Do not apply to start a Chapter in any city mentioned already in these lists. One Chapter in each city (except Greater New York) will be enough to start with. Later on, more will be organized when demand warrants it.

We will give your Chapter an official name and number. From then on, the name and address of your Chapter will be printed in every issue of WONDER STORIES, so that those who become members of the SCIENCE FICTION LEAGUE from time to time, who live in your neighborhood, may join, increasing the size of the Chapter. Dues or fees of any kind may be charged within local Chapters, in order to carry on special activities, only upon the agreement of all the members. Those members who do not wish to contribute, will not be expelled from either the Chapter or the LEAGUE by not doing so. In other words, all contributions must be voluntary, though a specific amount may be decided upon. This will be done only within local Chapters—there will be no dues or fees of any kind conducted by the LEAGUE Headquarters. Treasuries accumulated by this method may be used to issue pamphlets, hire halls or lecture rooms, or any other reasonable thing that the Director and local members see fit to use it for. This also includes outings, parties, etc. The Director or his appointee will be the presiding officer at each meeting. Assistant Director, Secretary, and Treasurer may also be elected by the local members. However, accurate minutes must be kept, a duplicate of which will be sent to Headquarters directly after they have been approved at the next meeting. Important activities recorded in the minutes will be discussed in this department, which will be the voice of the LEAGUE and all its Chapters. Meetings may be held at any frequency, everything to be decided by the local members. All helpful suggestions made by members during any meeting will, of course, be recorded in the minutes and therefore prove of value to other Chapters. There is to be no competition between Chapters—they are to co-operate, and perhaps, after a while, we will have a grand convention somewhere with delegates from the various Chapters. Would you like to be a Director of a local Chapter of the LEAGUE? There will be very little responsibility on your part, and it is not hard to find a meeting place. If you can't start off with a lecture room or hall, or one of the members' homes, then you can meet in the nearest public park until the Chapter is larger and can afford something better.

(REVERSE SIDE)

I consider myself belonging to the following class: (Put X in correct square.)

Professional
(State which, such as doctor, lawyer, etc.) ☐ .....

Business (State what business) ☐ .....

Author ☐ .....

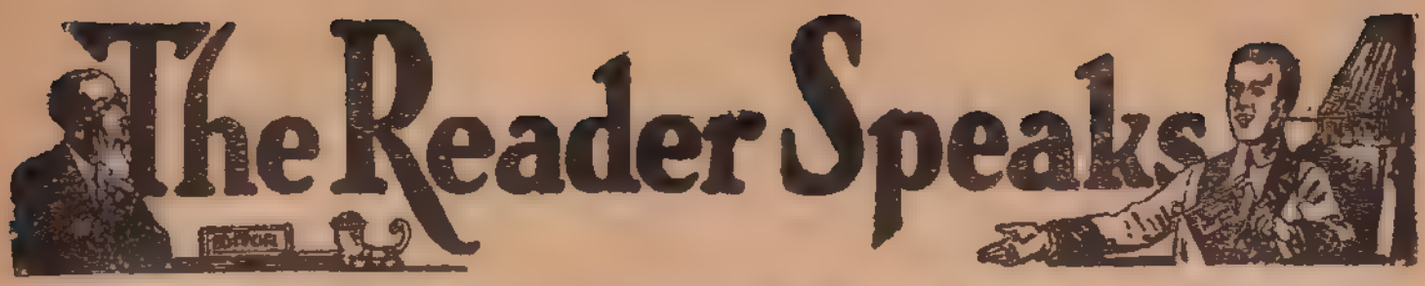
Student ☐ .....

..... ☐ .....

Age.....

Remarks:.....

.....



IN this department we shall publish every month your opinions. After all, this is your magazine and it is edited for you. If we fall down on the choice of our stories, or if the editorial board slips up occasionally, it is up to you to voice your opinion. It makes no difference whether your letter is complimentary, critical, or whether it contains a good, old-fashioned brickbat. All are equally welcome. All of your letters, as much as space will allow, will be published here for the benefit of all. Due to the large influx of mail, no communications to this department are answered individually unless 25c in stamps, to cover time and postage, is remitted.

Mr. Lenard's Answer

Editor, WONDER STORIES:

Yes, you are quite right! This envelope with the outlandish stamps and the—by now familiar—green fountain pen writing is the answer to Mr. Rice Ray's letter in your September issue.

But before starting any argument with Mr. Ray, I would most forcibly impress upon his mind that I don't want to quarrel along with him for any longer time. In fact, I consider the authors, editors, readers, illustrators—I don't think it is loyal to omit even the advertisers, because they take out their share in sustaining the mag—of WONDER STORIES as a great family, extending its bonds all over the world. And so, I just don't want to hurt a family-member. I say this only to accent that my argumentation with Mr. Ray is strictly on a friendly basis and I thoroughly disapprove of any such interpretation as that of Mr. Bob Tucker in the June issue under the heading, "He Murdered His Facts." I am no murderer, not even of facts, and it is difficult to imagine that Mr. Ray wanted to murder his own facts. Indeed, we see he makes a well-founded effort to resuscitate them.

And now let us start with the juice. First of all I want to thank you for the high-intelligence rating of WONDER STORIES readers—including my humble self—which is really a calming feeling for all of us and especially the editors. Don't forget, Mr. Ray, that it is always easy to correct one's errors after they have been picked out by some nasty critic. However, it is much more difficult to avoid them in advance. You can in nearly every case find some suitable explanation for the facts and state that you have found it too obvious to include it in the story. A most vivid example of this is to be found in Mr. Ray's first argumentation, where he practically accepts the proverbial straw I offered him, to save this part of the story. This is what they call an excuse.

The question of the illustration does not concern you, Mr Ray. You cannot be held responsible for the blunder of the artist. However, we are all mortals and apt to make a mistake. This goes for the editors too. So just let's forget it.

As to the third and last argument of Mr. Ray, let me hasten to say that I am well aware of the three possibilities of motion picture recording and projecting, viz., standard intermittent film motion and the two ways of continuous film motion, namely, the stroboscopic and the optical intermittent methods (Jenkins, Mechan, a. s. o.). That the stroboscopic method did not enter my mind is due to the simple fact that in this part of the earth the alternating current has quite different cycle periods than 25 per sec. In fact, the house mains are either D. C. or A. C. of 55-60 cycles. These figures in my subconscious mind, I did not find the very probable explanation you proffered.

Of course, you are well aware of the fact, Mr. Ray, that I could continue to pick asunder your story, be it only for the fact that you discovered a brand-new form of accidental television unit, working on new and unexplained principles—because it is not yet clear how that picture originated by current impulses in the lamp filament or in the slit sound aperture. Also the oscillating mirror would wobble the resulting picture to and fro, thus again giving a blurred surface. I could go on for some time but I won't. So let's shake hands and close down our little skirmishing in a friendly way. It served its purpose admirably and helped to clear up some points which otherwise would have been unintelligible to the readers.

I honestly hope to see soon a new story of yours appearing in the columns of WONDER STORIES, preferably a sequence to the former one or a similar yarn containing some movie stuff too.

As for your last paragraph, I am afraid there will pass some time till I experiment with English writing. At the present time I can imagine only two ways to get into the stride. I could write in German and the editors could have translated the story. But as I am a rather unknown person in these fields, I am afraid they would not take the risk of translation expenses. The other possibility would be that I work in cooperation with one of WONDER STORIES' authors. I would deliver the detailed plot, he would do the literary work, and we could divide the earnings. If anybody gets in touch with me on these lines, I'll be happy to enter into correspondence with him. Then you'll have a chance of kicking on me, if you don't happen to be the one who cooperates with me, in which case we'll join our forces to kick back at any critic bobbing up his or her head. So long, Mr. Ray!

I just received my September issue and had no time to read it yet. But there is one thing I'll tell you, Mr. Editor; don't let yourself and your authors become discouraged by any undue, harsh, or malicious criticism. Comments should be always constructive and those grumbling, unsatisfied readers who object to every little detail as untrimmed edges, cover strip, illustration colors, arrangement of contents page, etc., *ad infinitum*, should be forced by a Government decree to pay the double price for the mag and not be allowed to read it. Some cure for them, huh!

Best wishes to WONDER STORIES and all its authors (including, of course, Mr. Ray).

ANDREW LENARD,
Budapest, Hungary.

(It makes us very happy to print this letter from our reader in the old world, and we certainly hope to receive many, many more from him in the future. The three we have had so far have been lengthy, but well thought-out, and we are sure have been very interesting to our readers. This one, we presume, ends the scientific argument between Mr. Ray and Mr. Lenard.

We never become discouraged when we receive criticisms that are not altogether constructive, such as the following letter, because we know that after its publication we shall receive a great many indignant letters from our loyal readers.

We have a standing offer of ten dollars each for accepted detailed plots of science-fiction stories containing original ideas. These plots we turn over to the author whom we think can best work them into readable stories.—EDITOR.)

We Need An Aspirin!

Editor, WONDER STORIES:

When Mr. Ted H. Lutvin's reply to my criticism of him in the June issue appeared in the September issue, I was willing to consider our argument as concluded and to let him have the last word. However, the letter of "Hoy Ping Pong" in the October issue makes it imperative that I write again.

I was under the impression that WONDER STORIES followed the policy of not printing letters signed by

pseudonyms, yet here is a letter signed by what is a crude and childish attempt at concealment of identity, to say the least. An anonymous attack upon a person is the most cowardly thing anyone can do, Mr. Hoy Ping Pong. An anonymous attack is the most foolish thing anyone can do when the anonymous person's identity happens to be known, Mr. Tucker of Bloomington, Ill.

Mr. Hoy Ping Pong Tucker speaks of "we pseudo-scientific fans." That's quite correct. The science in W. S. is pretty nearly all *pseudo-science*. "Pseudo" means "false," my friends, and what better description could be given of the "science" in WONDER STORIES than that?

And I would like to correct a misapprehension from which both Mr. Lutwin and Mr. Tucker are suffering. I never criticized the editors of W. S. for letting a few errors slip by, as they both state. I criticize the editors for doing *no* editing, for letting *all* the errors which the authors make slip by. That seems to me to be the cardinal sin in science-fiction.

As for my little dispute with Mr. Lutwin: I thank him for all the complimentary things he said about me and I reciprocate. I think the same of him. But our argument is of necessity ended for we have arrived at a difference of personal opinion and that is a matter which cannot be argued: *"De gustibus non disputandum est."*

Furthermore, I notice in the LEAGUE department that Mr. John Shounder stated in his letter to the *Lebanon Daily News* that many educators have pointed out time and again the educational value of science-fiction. I challenge Mr. Shounder and the entire staff of W. S. to name *one* important educator who definitely made any such statement.

My personal opinion is that science-fiction has nothing in store for it in the future except to continue as what it is now, namely, as an obscure form of pulp fiction, read only by persons of average intelligence or less. In the early days (1926-1930 approximately) science-fiction was read by many mature men of intelligence and education above the average. This was shown by the letters they wrote to the magazines, letters containing technical, abstruse discussions of scientific points. Those letters no longer appear, because these readers dropped away as science-fiction sank to the low status it now occupies. Look at the letters in any science-fiction magazine these days. Lists of what one or another reader liked or disliked, suggestions that are never followed, and disputes over personal opinion such as the one between Mr. Lutwin and myself. Of course the editor will deny all this, but it is true nevertheless.

This will probably be my last letter to "The Reader Speaks," inasmuch as my attempts to better the science-fiction world in general and W. S. in particular have borne no fruit. It would not be so bad an idea to do what Mr. Lutwin suggested i. e., to let me edit the mag for a while. I could promise one thing, there would be no errors in science.

But with things as they now are: *Sic transit gloria scientifiction.*

MILTON KALETSKY,
Bronx, N. Y.

(You will notice that, when we printed the letter from Bob Tucker under his pseudonym "Hoy Ping Pong," we included "Bloomington, Ill." which was offered as a clue. Mr. Tucker is the only one in Bloomington who has written to these columns.

Funk and Wagnalls' Unabridged Dictionary defines "pseudo" as "a resemblance in many symptoms, but a lack of the specific characters that mark the true form." That is the definition of pseudo as used in the word pseudo-science. If science-fiction abided only by absolutely known facts, there would be very little fantasy in it or allowance for imagination. Science-fiction is *based* on known facts, but must propound theories of its own.

It is your fourth paragraph that inspires the caption for this letter. Do you think it is fair to accuse the editors of doing no editing and letting *all* errors pass—particularly when the statement cannot possibly be true? Though errors do slip into our pages occasionally, and we must apologize for being only human, we make several corrections in every story before it is turned over to the printers. You should see some of our manuscripts and how they are marked up while being edited. If we did not do this, you would see quite a difference in the magazine. It would almost become as bad as you think it is now.

It is well known that the readers and authors of science-fiction are of a higher mental status than those connected with other fictions. Mr. Mortimer Weisinger, one of our aspiring authors, once pointed out to us that the following authors and other notables of science-fiction are found in the yearbook, "Who's Who in America": Edgar Rice Burroughs, J. U. Giesy, Stanton A. Coblentz, George Allan England, Dr. T. O'Conor Sloane, Hugo Gernsback, Edwin Balmer, William MacHarg, T. S. Stribling, J. S. Haldane, A. Hyatt Verrill, Fred MacIsaac, Ellis Parker Butler, and Eric Temple Bell, who is known to fans as John Taine. This list is produced by a very perfunctory search; a thorough investigation would probably uncover many more. Also don't forget Gawain Edwards, who is G. Edward Pendray, an editor of the "Literary Digest." Notice that the editors of the two leading science-fiction magazines are in this "Who's Who" list. What other fiction field can boast nearly as many distinguished contributors?

We are inclined to agree with you on one point. Near the end of your letter you state that if you edited the magazine there would be no errors in science. We know from our dealings with you that your scientific knowledge is to be highly respected, considering your age, and your magazine would not only hold the readers who are first for science, but you would undoubtedly secure many more who have the same views as yourself. But—the magazine would no longer be science-fiction and you would lose those of our readers who buy the book for its fantasy and for its broad-minded imagination, which is 99% of the fans. Fantastic stories without the least bit of logic, science or possibility are fairy tales. Material such as we print is science-fiction—fantastic, yes, but not illogical nor unscientific. Stories of the type you require would lose all their fantasy and would probably be appreciated most if interspersed with the Smithsonian Physics Tables, but not in a science-fiction magazine.

Ironically enough, even though you demand so much science in science-fiction, you may recall submitting a story to us recently which was rejected, on one score, because of lack of science!

We regret very much that you have contributed your last letter to "The Reader Speaks" and hope that you will soon change your mind. The old column would not be the same without you. Your letters have kept interest alive. Right here we'd like to ask our readers if they have enjoyed Mr. Kaletsky's letters and would like to see more of them.

From the ending of your letter, Mr. Kaletsky, we have come to the conclusion that you are no longer a science-fiction fan. WONDER STORIES prints first class science-fiction only, and if you do not like it, as is very evident, you simply do not like science-fiction. However, "they always come back," and we are sure that you will some day become a fan again, and will realize that science-fiction has not gone down-grade, but only your interest in it, temporarily, we hope. —EDITOR.)

He's for Paul

Editor, WONDER STORIES:

That's a fine cover Paul did for the October issue. The story it illustrated was fine too. Eando Binder's stories are always "different" and refreshing. Let's have many more of them, please.

"The Fall of the Eiffel Tower" is a fine story indeed. In fact, it almost comes up to American science-fiction.

"The Brain of Ali Kahn" is third best. This author has done much better work.

I did not like "The Final Struggle." Not because it was a weird-scientific tale, but because the plot was poor and the story poorly written. This is the first time in a long while that I have turned thumbs down on a story in WONDER STORIES.

There are only four stories listed in the fourteen items on the contents page. This stuffing of the contents page with fillers is going to do you more harm than good. It will give the appearance of a large contents, but newsstand glancers will think the magazine to be made up mostly of non-fiction.

Thank you, Mr. Lenard of Hungary, for sticking up for Paul. I don't think Paul's human figures are as bad as they are set up to be. I've seen work of his that had some mighty fine figure work in it. I'll admit that sometimes it is not so good, but then the rest of the illustration always offsets this. Cutting down on figure work won't help Paul to improve it. The small size spoils Paul's work. It looked much better in the large size. (There you go again on the large size—EDITOR. Yowsah! —J. D.)

JACK DARROW,
Chicago, Ill.

(We are glad to see our loyal readers stick up for Paul. He has been with us from the beginning and we believe that his covers have been a big influence

in boosting the circulation of the magazine. He has been illustrating science-fiction stories for over twenty years, much longer than any other artist, and the technique he has developed in two decades is incomparable.—EDITOR.)

Score One For Our Side

Editor, WONDER STORIES:

Now I'm not denying that Mr. Wollheim's letter was constructive criticism, but I always thought that if you had a criticism to make, then make it and show how to remedy what you think wrong, but Mr. Wollheim merely says what he thinks is wrong and makes no suggestions.

I am sixteen years old and I have been reading science-fiction since March, 1928, and I have never read a more unjust and unfair letter.

Perhaps I am not an average reader, but I am not partial, and here before me I have "all three" and I can see that Mr. Wollheim is right. I would certainly pick the one which is fresh and clean and new *and* strange as it may seem, the one I pick is WONDER STORIES.

I very much fear that Mr. Wollheim has something radically wrong with his eyes. If he knew anything about printing he would be able to see that the contents are not exactly the same size type as the rest of the issue, also your contents page is distinctive in that it is dark.

I am glad to see that he approves of your editorial.

As for the type, one magazine has exactly the same kind as nearly as I can tell, and the other is just a trifle lighter. Neither the August or September issues of WONDER STORIES is blurred except on one or two pages, neither are the illustrations blurred.

Since he wants "different" stories, I would suggest that he try "The Sense Twister" in the August WONDER STORIES or "The Men from Gayle" in the September issue. "The Man from Beyond" is unique in my opinion and so is "The Living Galaxy."

Here is my own criticism; put in more stories. Your competitors have from one to four more stories than you do.

Well, here's to the long and happy life for WONDER STORIES.

STILLMAN CORTELL.
Folsom, Calif.

(Thank you for defending WONDER STORIES against Mr. Wollheim's onslaught. What you say in your first paragraph has rarely been brought out—namely, that a person who criticizes should also name a cure. —EDITOR.)

The Final Struggle

Editor, WONDER STORIES:

The October cover is better than the September cover. It is so well drawn in exact detail. And such a wealth and profusion of color. The stories are all excellent except "The Final Struggle" which is one of the worst stories that has ever been included in your magazine. Please do not give us any more of this type. "The Brain of Ali Kahn" was disturbing and also thought-provoking. "The Fall of the Eiffel Tower" is the best French science-fiction story that I have yet read. But you have only four stories in this issue. How come?

I wish that there was a really open forum in a science-fiction magazine where the respective merits of the different magazines could be discussed without referring to them as Magazine B or your chief competitor, or as I refers to them by their real names, the editor steadily blanks them out on refrain from printing the letter.

I like the idea of the science-fiction degrees. It would add much interest to the proceedings of the S.F.L.

NEWELL CROWRELL,
Monroe, N. C.

(We are sorry that you did not like "The Final Struggle" in our October issue. We have received many more letters condemning this yarn. At the heading of this department you will notice that we say, "If we fall down on the choice of our stories or if the editorial board slips up occasionally it is up to you to voice your opinion." And that is the only way we can tell what kind of stories you want. We printed "The Final Struggle" as an experiment and as we find that you do not like that type of material, we will do our best to keep future issues free of it. -EDITOR.)

The 'Indefinable Something"

Editor, WONDER STORIES:

You should never sniff at having your stories "typed" as "like those of the year 1928." That is a compliment. Though I do not have my files with me and cannot check up accurately on this, I think that you will find stories of that period were such ones as "The Skylark of Space," "Buried the Infra-Red," "The Airlords of Han," "Sunken World," "Miracle of the Lily," "Moon of Doom," "The Nth Man," "Voyage to Kempton'ia," and similar tales, which you cannot easily equal today. Though good, your modern stories are not so apt to have that 'indefinable something' of our great-old stories. Yet "A Martian Odyssey" was one such as the editors were and I would suggest backing the author to the limit if he can produce more like stories.

I think probably the most interesting part of the magazine this month was the Readers' Department. Many readers have often claimed this, and indeed it seems so in the September issue. "Letters by Lutwin, Tucker, Wollheim, Pritchard, Kyle, Rothman, Torrance!" foregrounds scientifictioneers. Film defense on his story by author Rice Ray; Lutwin vs. Kaletsky; Bob Tucker turning laughable "tyrant" as he becomes Emperor of Earth; curious criticism from Donald A. Wollheim; Kenneth B. Pritchard with a useful abbreviation—SFF for 'science fiction fan;" good summation of the reprint question by Claude A. Dames, Jr. (Also the magazine's side by the editor); and really—as I have said—highly interesting letters from nearly every other September contributor.

Enjoyed every story well, and especially: the parts of the trip *beyond* space in "The Living Galaxy," and the writing clever in its simplicity—of the "Good Doctor."

Did you notice the nearer character in "The Tree of Evil" illustration, as drawn by Winter, looks like H. G. Wells?

"Enslaved Brains" ended well, as does "Fall of the Eiffel Tower" start. The de Richter serial is dreary, thank goodness, and seems the beginning of a real science-mystery story; which was not the case with "The Radium Terrors," or something like that that you published a while back (French, as I remember, quite drawn out and detailed, rather lacking in style, and a bit hopeless.)

About Paul's cover this time, its looks are superlative! But the fans' favorite has got *all* out of proportion on the space ship. "Leniency must be allowed," you will tell me; but after *all* . . . . This rocket which was supposed to have come through space housing a whole crew of men appears on the cover as a toy, twenty-five feet across at the most. I have the impression the men being deserted could jump up off the ground, land on the space ship and straddle it! Unless we have a pure fantasy of a rubbery dimension or something, I think some proportion should be observed.

About the Edges, the reason readers complain I believe (outside of the fact that the appearance *would* be much neater if the edges were straight), is that they see what is given in RADIO-CRAFT and the other Gernsback Publications—the new ones, POPULAR MEDICINE and PRACTICAL MICROSCOPY—and especially in the new EVERYDAY SCIENCE AND MECHANICS at ten cents. To my knowledge WONDER STORIES is not only the only small size Gern-back publication (though we won't go into that) but the only one without straight edges. The print on a few of your pages actually is blurry, too, as Mr. Wollheim points out. In our digest of imaginative literature, *Fantasy Magazine*, a while back, the secretary of a prominent stf. club across the sea wrote us that our paper, type and make-up rather disappointed the reader-members (we have since taken care of this) and that they looked forward to our digest if they had "an X-ray and a ten-inch reflector!" to read it. I think that is the attitude of every real stf. fan, and that they will read WONDER regardless of "small size," "hard cover," "rough edges," or whatever in their opinion is the matter with it. But we can, all of us, only wonder "why!" I think, as we observe that of all the Gern-back Publications the poor stf. fan get the most bread in number of make-up. The Mechanix group are magazine, straight edge. Page after page illustrations, A-1 articles, and all for a *dime*. While only very few magazines are left on the stands at 25c, however, W.S. goes on as ever. With stories, departments, SCIENCE FICTION LEAGUE etc., I offered it may seem a pleasurable point to [illegible] harp on edges, but if the point is picayunish, [illegible] the magazine is big enough to take care of it [illegible] readers. Especially, again I say, as it is only in this one Gernsback publication out of about five—and it

the oldest and best known, at that!—that this paradoxical and unsatisfactory condition exists.

In a lighter vein, how about a suggestion to get ahead of all your competitors in the matter of the number of words of reading matter? Why not print the magazine in shorthand?! That way you could have the equivalent of about a thousand pages per issue. No one would ever get through reading an issue, most of them couldn't anyway, and so no one could ever be ready in time to complain about the stories—or know anything about them to complain. For readers who don't like "lurid covers," they could be printed in outline only, and a box of crayons supplied with each issue so that each could color the cover to his own liking.

FORREST J. ACKERMAN,
San Francisco, Calif.

(We believe that the "indefinable something" you mention in the 1928 stories of science-fiction is not in the stories themselves, but in the minds of the veteran readers. They were new—science-fiction was very young as a concerted movement and any story of fantasy was a masterpiece if it was written by a good author. The same story that was a masterpiece in 1928 would be "just another story" if written in 1934. If we did not "sniff" at having our stories "typed" as like those of 1928, it would mean that we admitted no progress in six years!

We repeat that we will even the edges of the magazine as soon as possible. They are already straight and smooth and always have been.

The fact that WONDER STORIES is such a success at a quarter a copy on the newsstands while most other magazines have reduced their prices shows that we can pull through hard times without a sacrifice. We tried the fifteen-cent size for a few months and found that our readers objected. Rather than have less science-fiction each month, they would pay a quarter and receive the full-sized magazine.—EDITOR.)

Variety On Our Covers

Editor, WONDER STORIES:

I am glad to see that the September issue came out so soon. I didn't expect it for at least another week. There is nothing much I can say about the stories except that they are all perfect. I haven't read "The Fall of the Eiffel Tower" yet, but I hope it is not like another French story you had a while ago, "The Death of Iron," I think it was. All the other stories were excellent, though I think that "The Tree of Evil" belongs more in *Weird Tales*.

I liked "The Living Galaxy" and I think that Laurence Manning could have made a longer story out of it. I see that it is a sort of continuance of "The Man Who Awoke." We need more stories of that kind. Why do we have to stick to our little Solar System? I want stories where you go all over the universe. There are three authors whom I think could do the job better than any others—E. E. Smith, J. W. Campbell, Jr., and Richard Vaughan. Can't you give us a long interstellar adventure story by one of them?

To get to "The Reader Speaks"; I have been trying to convince J. H. Hennigar in our private correspondence that Paul is the best artist, but he won't believe me. I wish to take exception to the person who said that Paul's covers are monotonous. Look at the last few issues. June: Shows the people on the electron going into the ray. Wonderful projector. July: Shows future city with marvelous detail. Soft colors. August: Shows people on their platform in the alien dimension. Loud colors, but very realistic. September: Shows scene on Venus with strange plants and space ship flying. If this is monotonous, I'd like to know what variety is. Also, about the red and yellow backgrounds. What color do you want? Green and lavender? You notice, Paul never was good with blue, so that's out of the question. It would be a relief to get a black space scene once in a while, like "The Space Coffin" or "The Moon Devils." They are among his best. I always was a champion of Paul, and I will defend his process any time.

Here is something that has been puzzling me. Could anyone clear it up? On the road to Atlantic City, Route 30, I think it is, I saw a metal sphere about eight miles out from Camden. It was about 50 yards to the side of the road and seemed to be about 30 feet in diameter. It might be an observatory, as the lower half of it was partly obscured by trees, but I am pretty sure it was a sphere. From reading science-fiction, I have a tremendous imagination, of course, and the thought at once struck me that it might be a space ship or something like that. I am probably wrong, but I would like to know what it really is.

Yours till Hugo Gernsback the 59th runs for president under the SCIENCE FICTION party.

MILTON A. ROTHMAN,
Philadelphia, Pa.

(We try to put as much variety on the covers as possible. We use a different color each month and have had covers of almost every color possible with our printing processes.

We do not know what the metal sphere was that you saw outside of Camden, but it is more likely a gas tank than a space-ship.—EDITOR.)

Wanted: New Ideas

Editor, WONDER STORIES:

I must congratulate you upon the cover of the August issue—it was a masterpiece. The story it illustrated ("Dimensional Fate" by A. L. Burkholder) had an excellent theory, was extremely logical, but the actual possibility of the story—the adventures of Madison and Burnett in the other dimension—was passed by. The complications of the detection and arrest of Doehler and Patterson were not as interesting as the adventures of the scientists on the strange planet could have been made. Perhaps this difficulty could be remedied in a sequel. I am glad to see the influx of new authors in the pages of W.S., but hope fervently that this does not herald the exit of the old favorites, such as Clark Ashton Smith, P. Schuyler Miller, and Nathan Schachner. You haven't had any contributions from them for quite a while, especially Smith. Some of his stories were the best examples of A-1 science-fiction that I have ever read. He (like A. Merritt) has that rare gift of mixing action, adventure, excellent science, and logical theories into an incomparable yarn. So get Mr. Smith into the s. f. field again.

"Enslaved Brains" is getting better and better, although it cannot reach the level of "Exile of the Skies." By the way, it seems that lately your authors are forsaking the good old interplanetary tale for those of weird dimensions and startling inventions. Just because there are other branches of science-fiction, it is no reason that s.f.'s old stand-by should be forsaken, as the mag grows older. And time-traveling, too; just because a few readers have proven to their own (and no one else's) satisfaction, that time-travel is impossible, it is no reason for the field being neglected.

But, to get back to my original topic, the current issue:

"Enslaved Brains"—excellent.
"Men from Gayin"—good.
"Dimensional Fate"—good.
"A Visit to Venus"—good.
"The Return of Tyme"—great.
"The Sense Twister"—fine.
Editorial—"Wonders of Reality"—excellent.

The SCIENCE FICTION LEAGUE has a great work before it—that of educating the public in the importance of science-fiction. Recently, I happened to be in a local book store and heard a remark made by a man as he noticed some WONDER STORIES and other science-fiction publications.

"Crazy stuff," he laughed.

That's what the general public thinks, or rather guesses, of s. f. Not eight per cent of the American people recognize the importance of this form of painless education. That should be one of the main purposes of the LEAGUE: to inform the public of the importance and potentialities of science-fiction, and then, and only then, will the world realize the entertainment, enjoyment, and instruction contained in this "crazy stuff."

Give me some information on your proposed Annual. When will it come out? How much will it cost? If wholly reprints, what stories will it contain?

GEORGE HERRIG,
Member 949 SFL,
Los Angeles, Calif.

(The main reason why you see so few interplanetary stories in our magazine lately is that most of them submitted to us, several every day, are hackneyed—the same old stuff rehashed. We want new ideas, and if the author writes an interplanetary story that is different from hundreds of others, we usually accept it, but the majority contain stereotyped characters and incidents. Originality is the keynote of the new WONDER STORIES.

The details of the proposed Annual are still nebulous. —EDITOR.)

A Refreshing Letter

Editor, WONDER STORIES:

Say what's the big idea of leaving a cliff-hanger in the air about that mess [illegible] A Visit to Venus"? Wait till I get my hands on that Pragnell guy if he doesn't write a sequel to that story that's good enough for you to print I'll—I'll—I'LL, well, what can I do except write him a letter and make him read it.

It isn't often that I write a letter to torture you with, but occasionally I get fed up with things like this Howard Crowder who wrote "his money's worth" and so I have to blow off a little steam and tell them what I think. My opinion is to form a special committee of the S. F. L. and hang all such persons "by the neck until dead."

I have read WONDER STORIES ever since it was AIR WONDER and SCIENCE WONDER and I used to have a good collection of back numbers, but when I was out of work, I sold them to buy the new copies when they came out. That's the best outline I can give you of my opinion of "Our" mag.

To continue the thought which I tried to bring out in the first paragraph; I think that many of the stories that you have published since you changed your editorial policy (more than one congratulation on the change—you were good before, now you're excellent) should have some very interesting sequels to them. I like the idea of the "Strange Club"—MORE OF IT!

I am not an editor, so I won't attempt to arrange your stories in order of their merit, but I'm hoping that the part of "Enslaved Brains" which is to come lives up to the high standard set by the first parts. Your reader until we are all destroyed by "meanies" from the fifth dimension.

ROY MSACHAM,
Akron, Ohio.

(We certainly enjoy receiving breezy, complimentary letters such as yours, and hope you will write many more of them. Of course, we would find the editorial business pretty boring without a quantity of criticisms and brick-bats of all shapes and sizes, but at the same time, we, like everyone else, like a little flattery.

Sequels aren't always as good as the original stories, and others are better to be left in the air.—EDITOR.)

His Favorite Planet

Editor, WONDER STORIES:

I am a brand new reader, by accident. I came across one of your advertisements in one of your other publications and I knew that WONDER STORIES was the magazine I had wanted for years. I have just finished the July and August issues and I'll stick with WONDER STORIES through thick and thin.

Some of your readers complain of the paper that it is printed on; let me say that it doesn't matter what kind of paper it's printed on so long as we can read what's on the paper. Your covers are excellent, although August's illustration disagrees with the story somewhat. I'd rather see Paul doing entirely individual drawings. Incidentally, let's have more illustrations, and since I am a new reader, I also would like to see some reprints of some of your popular stories of the past which I was unfortunate enough not to read. But let us have them in WONDER STORIES and not in a separate publication.

Let me give three stars to Burkholder for "Dimensional Fate" and two stars for Weinbaum's "A Martian Odyssey," also two stars for Manning's "Voice of Atlantis," and three stars for Pragnell's "A Visit to Venus."

In conclusion, let me say I'd rather read more stories of interplanetary explorations and settlements. Also more Venus stories; it is my favorite planet, and I believe that this is the only planet on which life can exist as on the earth, but I don't say that there is life there, but that conditions do exist which make it possible for earthmen to live there. Let me conclude this lengthy letter by wishing much success, increased circulation and better stories.

HENRY BEISEL, Jr.,
Carteret, N. J.

(We are pleased to have you become one of our many thousands of interested readers. We acquire new ones every day through our advertising and newsstand display.

Conditions on Venus may be able to support man, but as you know, the planet is constantly enshrouded in heavy clouds, and what would we do without our sunshine vitamin D?—EDITOR.)

All About Paul

Editor, WONDER STORIES:

I realize that the weather has been unbearably hot, and your overtaxed brain, wrestling with many [illegible] from Venus, Mars, Pluto, Jupiter, Neptune, and Mercury not to mention demons out of the future, past, and fourth dimension. (Good old fourth! It's been accused of a hell of a lot of dirty deals! And still, like the brook, it goes on, not [illegible] or growling at anyone for the countless [illegible] upon it.) But I'm going to give you something to worry about.

I believe I'm entitled to give a little "constructive" criticism, since I've followed your beloved periodical and its miscellaneous forebears. And my [illegible], if nothing else, you'll have to admit, [illegible]; I'm not only hacking futilely at the base of my subject, but am inviting death by various lightning ray projectors, disintegrators, paralyzers, and [illegible]-posers (heaven forbid the last!) It is merely this: Frank R. Paul gets in my hair! He's flies in my soup. He's— but I don't mean it just that way. You see—I don't like the stiff collars all his "future men" invariably wear! He must have begun his art career in 1909, depicting to that frolicsome generation (probably in SCIENCE AND INVENTIONS' "Dr. Hackenstein's Secrets") what the well-dressed future super-scientist will wear. To hash it up briefly, all his drawings are exactly alike, and would fit any yarn. Or does he have a set of drawings already accumulated, and [illegible] one out of the files when he needs one?

Whew! You're probably send me an invisible, [illegible]-controlled, "asylum" for that, as Walter would say. And the growls of resentment will sound like a [illegible] Fifth Avenue buses if these lines ever see the light. "Breathes there a man with soul so putrid," they'll howl, "Who has the nerve to say, 'Paul's drawings are lousy!'?" (*Am* I getting a kick out of this, or am I? Or *will* I?)

On the other hand, Paul, I think you're a pretty good guy. You're probably a church member, treat your family with consideration, and never kick at your mother-in-law. And you *do* have imagination, so rare these days in authors and artists alike. But USE A LITTLE ORIGINALITY, TOO! One can look at a magazine a block away and say: "Some of Paul's work!" Your drawings are wooden, lifeless, flat. They haven't the zest and crackling realism of more modern, original artists. A rut is a hell of a thing to get into, Paul. And you're in one now. Get out of it before it's too late. Don't take offense at my criticism. Do something to your work that will make me eat my words. I challenge you. See if you can. Here's hoping.

And Gernsback, you needn't sit back so complacently, nor smile so smugly. You're in a rut, too. And you're going to roll up your sleeves and battle to keep the newer publication from passing you in a cloud of dust. Get off your high horse and stop spouting lengthy scientific nonsense. Remember that people read to be entertained. When you begin piling on the deep, weighty, ponderous stuff, you begin committing editorial suicide. You're saddling your writers with too much of a handicap. Perhaps you say there is still room for the imagination to run riot, like a hog in a cabbage patch. But when the cabbages are hemmed in with a hundred layers of barbed wire, it takes more than a flesh and blood hog to root them out: rather, a machine would do it better. And that's what your authors are turning into: cold, emotionless machines, which manufacture a dry, unedible product which only a few hardy souls can digest. No juicy hams and chops. Just condensing tubes, transformers, and [illegible]. Doctors, chemists, scientists, with no chance for putting any real punch into a story even if they wanted to. (Incidentally let me apologize for calling your authors hogs. They aren't—unless they're hogs for punishment.)

Stop being so confounded scientific, and you'll be amazed at the increase in circulation. Stick to facts, yes, but DON'T GIVE LECTURES IN YOUR STORIES. No one understands them, anyway. Get a little glamour, a little mystery, a little spark of genuine mirth in once in a while, and action.

Don't make the reader regret that he's so damned dumb as not to be able to understand what he's reading. Treat him as an equal . . . an author can create the illusion of vast scientific data and knowledge, without actually propounding his weighty theories on the printed page . . . .

Cut the price down to twenty cents. A quarter's too steep for many who'd like to read WONDER STORIES. Put more illustrations in. Sprinkle them through the novelettes. Cut out serials; they've long been taboo.

Let Winter do a couple of covers. The variety would

do the magazine good. And I'm sure it would make Paul's reputation better than ever. You know the old saying, "Absence makes the heart grow fonder." People tire of the same old thing in unending succession. Movie stars realize this fact, and some will sign contracts for only two pictures a year. Nothing deep or weighty about that . . . . "Variety is the spice of life." Think it over, Mr. Gernsback.

Now that I've got it all off my chest, I want to tell you that WONDER STORIES and its competitor are my favorite magazines, and I wouldn't miss a copy of either. "They must be good to be where they are" —under such burdens!

HAROLD L. ZIMMER,
St. Louis, Mo.

P. S. Your SCIENCE FICTION LEAGUE is a step toward the top. Create reader interest, and you create circulation.

(We let Paul read your letter, and after learning all the nasty things you said about him, he went out to bury his head in the sand and we had a hard time persuading him to complete the October cover.

We believe that the rest of your letter, concerning the readability of our stories, is very well worked out and really contains something for us to think about. As you say, our readers buy the magazine primarily for entertainment and we do our best to keep all technical science from our pages, though we still do, and always will, insist upon *logical* scientific theories. Without logic, science-fiction becomes fairy-tales.—EDITOR.)

He Likes Paul

Editor, WONDER STORIES:

Mr. David A. Kyle has at last stirred me into action. Mr. Kyle, a close friend of mine, has persuaded me to write to you for the first time.

The first thing I am going to do, however, is to throw a gentle brickbat which is—the small size. To me it cheapens the appearance of the mag. The large size with the glossy paper that was a pleasure. It gave dignity to WONDER STORIES. But I guess it's necessary, so I shall not mention it again.

I now want to comment upon your artists. Winter is good; he does fine work. Paul is excellent; if you ever fire him from the staff, I swear by the sun I'll totally disintegrate all of Long Island and perhaps a few feet of Pennsylvania. While we are on the subject of artists, did you ever hear of a man named Elliot Dold? Mr. Kyle drew my attention to him. Mr. Kyle is a young man of no mean artistic ability; Mr. Ackerman can probably vouch for that. Getting back to Dold, his work is better than Winter, Morey, or Wesso. His work approaches Paul's very closely. If you ever have a notion of hiring another artist, look up Mr. Elliot Dold; he's great stuff.

The stories which I have so far read and think are masterpieces, are as follows:

The Time Stream, Taine—superb.
The Final War, Schachner—excellent.
Brood of Hate, Bertin—excellent.
Men With Wings, Stone—excellent.
Ark of the Covenant, MacClure—excellent.
Human Termites, Keller—very good.
The Man Who Awoke, Manning—swell.
The Voyage of the Asteroid, Manning—swell.
The Wreck of the Asteroid, Manning—swell.
The Alien Intelligence, Williamson—bewildering descriptions.

The shorter stories that I liked are:
Death from the Stars, Hilliard—superb.
Reign of the Star Death, Hilliard—superb.
The Moon Era, Williamson—superb.
A Conquest of Two Worlds, Hamilton—superb.
The Cosmic Gun, Colladay—superb.
The Return of the Cosmic Gun, Colladay—

And others too numerous to mention . . . . I should say that many of these stories are the result of the reading of the large collection that Mr. Kyle has.

Your best authors to my estimation are: Keller, Hilliard, Meek, Williamson, Taine, Schachner, Zagat, etc., etc., and etc. I was almost delighted to death when I opened my box and the SCIENCE FICTION LEAGUE Membership Certificate slipped into my hand.

Mr. Kyle and I are going to write you ever so often, as do certain other teams . . . . I will now stop this everlasting chatter; I think it's enough for one sitting.

WILLIAM ROTHLEIER,
Monticello, N. Y.

(We don't intend to fire Paul. We'd hate to see Long Island disintegrated, even though our offices are in Manhattan, and a lot of our best authors live in Pennsylvania New Jersey, we see, doesn't count in at all.

Your list of favorite stories is interesting. Many of them have become classics with our readers.—EDITOR.)

An Author's Opinion

Editor, WONDER STORIES:

From time to time various of your readers and writers have commented upon the successive adolescence and maturity of science-fiction. I, too, have been struck with random thoughts upon that subject, and one in particular which it seems to me is well worth consideration.

There can be little argument about the rapid growth of what we dub "Scientifiction" as a definite body of literature. The moving pictures are considering it more and more seriously; it has flourished for years in the short story form under at least three major magazine titles in the pulp-paper field; it has now acquired added stature in the realm of the novel by virtue of two great novels from the pens of Edwin Balmer and Philip Wylie in collaboration.

So far, however, the great majority of science-fiction yarns have been of the type that set up sheer adventure and action, or advanced science, as ends in themselves. I don't mean to criticise or seem derogatory toward the scientific adventure story. Not in the least. I have written them myself, and feel that their values are just as definite and legitimate as those of any other story type. But I also believe that no body of literature can claim maturity until it begins to concern itself equally with *character*, its development or degeneration, under the stress of conditions imposed by the story setting and action.

This is what I tried to do in my halting and amateurish way in my last appearance in your pages some 5 or 6 issues back (The Mole-men of Mercury). It seemed faintly appreciated in some quarters, and I wish to thank those who gave me good "notices" in "Reader Speaks." There are plenty of writers appearing in WONDER STORIES, however, whose work is neither halting nor amateurish, and who, I feel quite sure, could capably handle the type of work I'm boosting. Science-fiction, with science and adventure and action held in leash as means to an end, offers a heaven-sent opportunity to produce really lasting stories of character moulded and fired in the crucible of sensationally abnormal and trying circumstances.

A tough assignment? Sure. But I know that some of your contributors can do it if they try. Perhaps they want encouragement. If so then let this letter, with additional words from the editor be the spark to fire their mental tinder to great things . . . . Hope my little *idee fixe* hasn't bored you too much.

ARTHUR K. BARNES,
Los Angeles, Calif.

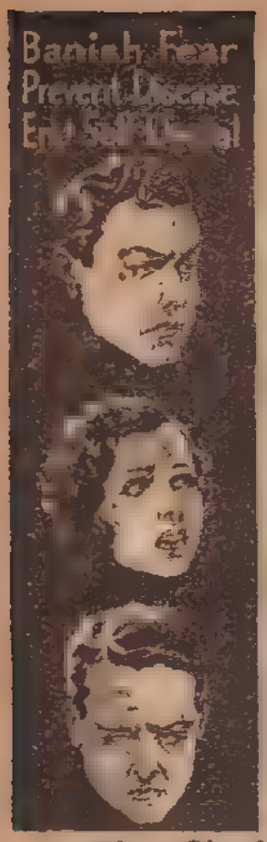
(We feel that you are perfectly right in suggesting that character plays a very important part in science-fiction particularly the new crop being turned out today. We believe that this is the main reason why Dr. Keller's work is so well appreciated. He seems to have a better insight into human nature than any other science-fiction author, and his psychology can certainly be called science. Psychology, then, is coming to the top.—EDITOR.)

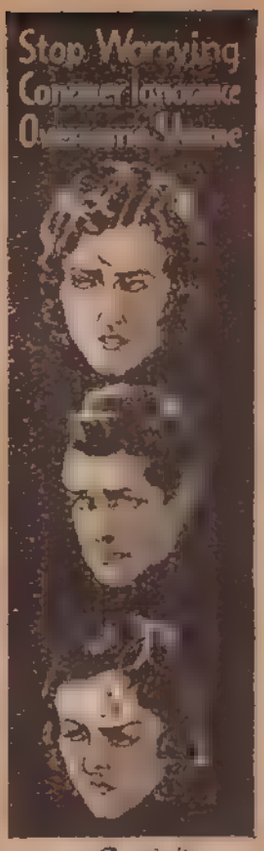
Hasn't Missed a Copy

Editor, WONDER STORIES:

Ever since 1929, when I found a copy of W.S. in a street-car, I have been a faithful devotee of science fiction. I purchase a copy of WONDER STORIES each month and I haven't missed a single one yet. But despite my hardest efforts to the contrary, I have nothing to show for my long years of constant fidelity to *the* magazine but a hazy memory. And all of this is because I just can't help lending every issue I get to at least one of my friends and relatives, etc., who invariably lends it to another friend, or else loses it. And I can rant and rave all I please and make no end of solemn resolutions, but it doesn't do a bit of good for by the fifteenth of the month my newest will have disappeared again. Nevertheless, my memory stands me in good stead, and I would like to add my voice to the insistent roar, which is becoming ever louder and louder; namely, the increasing demands for reprints of the popular stories of yesterday which are still looked upon as classics. Why not run a reprint department, reprinting one good story

(*Continued on page* 886)





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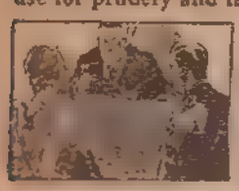

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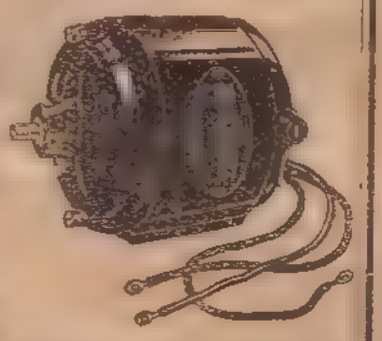

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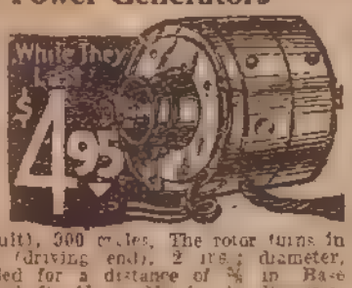

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THE READER SPEAKS

(Continued from page 884)

each month, or else issue a separate semi-annual or quarterly devoted entirely to reprints?

Another suggestion to which, I think, most of my fellow-readers would agree, is to print more stories of the type of "The Man Who Awoke." A hero who does not have all of the adventures of his life, is much more interesting than the ordinary 20-pages-then-oblivion hero.

Is it a fact that there is no apparent Present except as a figure of speech? If this theory is true, could "Time" be likened to a thrown ball thus: The ball, after going up shows no appreciable stop before coming down, even though it is a positive fact that there is a time, no matter how infinitesimal, when the ball is neither going up nor coming down? This may sound complicated but it will clear up if you substitute "FUTURE" for "going up" and "PAST" for "coming down."

Now here comes the usual cut-and-dried portion of every letter:

Let me congratulate Mr. Stanley G. Weinbaum for writing the best scientific fiction story that, in my estimation, has ever been written. "A Martian Odyssey" (Is the "T" in "Martian" hard or soft?) embodies all that can be wished for in a science fiction novelette. For the author is not in the least conventional, his characters are well drawn, and his speech is colorful in that unlike most authors he avoids the use of stilted phrases. The author's conception of life on a distant planet is very refreshing after having read so many times that it has little or no difference from that of our own earth. Please give us a sequel with "Tweel" as a sort of co-hero. I would like to say here and now that this is the only story that I have ever read twice in the same day and enjoyed both times. "Enslaved Brains" was good, despite the senility of the plot, and I hope that the succeeding installments are as well written.

"The Last Shrine" was a strange tale well told, although Mr. Cuthbert was slightly confusing on several details of the story.

One "Hair Raising Tale:" One "Putrid Fill-In."
"The Voice of Atlantis:" "Not so hot."

Paul's cover was good, as usual, but when it comes to the question of inside illustrations, my "battle flag" still waves proudly over the camp of Winter, although Paul has given us many fine pictures of late.

Here's luck and success to the 'League'!

JACK MCCUSKER.
New York City, N. Y.

(Anyone who keeps a collection of magazines avoids lending them to friends except on very rare occasions. Magazines are very susceptible to misplacing and loss. However, we believe that it is all right to lend an occasional copy to those of your friends that you think will really like it. Then, after reading one of your copies, let them buy their own.

Your theory of time being like a thrown ball is interesting, except that time is not supposed to have a beginning or end, like the flight of a ball. The present is practically non-existent, technically, but for all practical purposes, the present is very definite. We can say "this is the present," but by the time we have said it, it is the future [from the pronouncement of the statement] and the phrase was said in the past.

"A Martian Odyssey" has received tremendous praise so far from our readers and not one condemnation has come in to date. We don't see how anyone could help enjoying the story. Mr. Weinbaum has a touch of the master in him. His style never grows tiresome. The "t" in "Martian" is soft. The "ti" has the sound of "sh."—EDITOR.)

Ackerman Speaks

Editor, WONDER STORIES:

Your wonder stories are real good this time, July. Better than in several months. "A Martian Odyssey" is the outstanding story of the issue, to me; and it is an outstanding story beside.

Now there's a real imaginative tale! "A Martian Odyssey," Mr. Weinbaum, why have you been keeping back this talent scienti-fictional from us? I liked your first swell, and I hope W. S. has been successful in prevailing upon you for a sequel. I really haven't read such an interesting story of Mars in a long time.

"Last Shrine" was fair 'nuf. I didn't find anything

so fantastic or weird about it as the foreword led me to expect.

Voice of Atlantis" was good. To beat "The Man Who Awoke," a series would have to be *mighty* good, and I don't think the Stranger Club stories are doing that. But I asked for more of them, and I look forward to reading further.

A real treat, "A Hair-Raising Tale." It is a story I would characterize as being of the SCIENCE AND INVENTION type or like some of those humorous ones of early issues of your former stf. publication. I liked that kind then, and I do now.

Have completed "Druso." Good 'nuf. Fair serial. I want to see more importations—as a suggestion, "Creation's Doom," a German book they are reviewing in American and British stf. mags, sounds "epic." Let me tell you what, though, I'm liking the first part of "Enslaved Brains" better than "Druso." That speaks rather highly, I guess, for Eando Binder's story. It moves right along interestingly. And there's ingenuity in the naming of the conceptions in this future land—"Unterias," etc.; and "Sansrun" plane is pretty clever, and ought to stick. I didn't catch the Earth humans right at first, thinking that "Sansrun" was supposed to be merely a trade-name; but when viewed from the translated standpoint of "Without Iron," it is a good new short and snappy name for a heavier-than-air plane. Eando Binder's best story to date.

And that cover's fine, by the way! Give me Paul on future cities, machinery, disasters, and "creatures." As a matter of fact, give me Paul! When I say Elliott Dold, I mean Frank R. Paul. I've named the stf. artists as far as I'm concerned. And let me mention, *I like Paul's Martians*—people, to you.

The SEL is great, of course. With the "Get Acquainted With Science Fiction" article and Swap Column, you are becoming even more fan-conscious. I think the fans will repay you. Keep up with your new spirit!

FORREST J. ACKERMAN,
San Francisco, Calif.

(Executive Director Number One of the SCIENCE FICTION LEAGUE has always been an interesting letter-writer and active fan. Whenever an issue of WONDER STORIES appears without one of his letters readers wonder what has happened to him.

"Creation's Doom" is not fiction. We reviewed the book in WONDER STORIES.

We are glad that *somebody* likes Paul's drawings of men. We don't think they're so bad, and the other details in his drawings make up for any lack of skill in this direction.—EDITOR

Comments to Letters

Editor, WONDER STORIES:

And now, Mr. Editor, just what is the most interesting feature in the magazine? What a question, and what an answer. Well, my answer is: "the comments to readers' letters." And then the Editor's chest swells all up with pride, and says he to himself: "Well, at least the reader sees at last the real talent behind it: WONDER."

Seriously though, I mean it. And of course there is the usual suggestion. Yes, you've guessed it; it's more words per comment. Why? Because the comment is far more interesting than the letter proper. Not insulting, of course, that the letters are *not* interesting, merely that the comments are *more enjoyable*.

S. for the August issue—as usual, superb. Really, there's not much to write about—just the same thing each time, month after month—superb, excellent, etc. However, the cover this time was a little below par. I do not like that glaring red. Oh, yes, it attracts attention. Why wouldn't green, purple, orange? The point's irrelevant, however; let's get a little more color variety.

Anyway, that illustration for "The Return of Tyme" was Winter's best. I certainly would like to see a Winter cover in colors!

Speaking of covers. Here's an idea. Instead of the usual color by Paul, why not use a color photo from foreign or domestic stf movies?

While we're still on illustrations, I place my vote for more. "Column wide" illustrations inter-perse throughout the text of a story. It adds *so* much to the appeal. Also you notice I've changed my mind again, eliminating the banner atop the cover, and the white space, with the letters spelling WONDER STORIES,

(Continued on page 588)

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THE READER SPEARS

(Continued from page 887)

should be moved up to within a quarter of an inch from the top, thus giving more room for the picture. You might possibly alternate the colors of the words, WONDER STORIES, and the band (red) around them, so that they can be a directly opposite color to the illustration.

So, till the September issue, and hoping it's a green cover.

LEWIS F. TORRANCE,
Winfield, Kan.

(Now that you mention it, we notice that some of our comments to letters in this department are rather long—some as long as the letters themselves. However, we have received no complaints so far, and you seem to like the idea. All we want to do is answer the questions or comment upon the suggestions in each letter. We pay no attention whatever to the length of these comments, but want each reader to feel as though we read his letter very carefully and understand what he has to say.

Many of your suggestions in your last few paragraphs we feel are too trivial to act upon. Of course, if we receive several agreements with your ideas, we will do as you wish. After all, "the story's the thing," you know. EDITOR.)

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912

Of Wonder Stories, published monthly at Springfield, Mass., for October 1, 1934.

State of New York
County of New York ss.

Before me, a notary public in and for the State and county aforesaid, personally appeared Irving S. Manheimer, who, having been duly sworn according to law, deposes and says that he is the business manager of the Wonder Stories and, that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411 Postal Laws and Regulations, printed on the reverse of this form, to wit.

1. That the names and addresses of the publisher, editor, managing editor and business managers are: Publisher, Continental Publications, Inc., 99 Hudson Street, New York. Editor, Hugo Gernsback, 99 Hudson Street, New York, managing editor, Charles D. Hornig, 99 Hudson Street, New York, business managers, Irving S. Manheimer, 99 Hudson Street, New York.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Continental Publications, Inc., 99 Hudson Street, New York, that and the stock in Continental Publication, Inc., is owned by Gern-back Publications, Inc., 99 Hudson Street, New York that the stockholders of Gern-back Publications, Inc. are Hugo Gernback, 99 Hudson Street, New York, and Irving S. Manheimer, 99 Hudson Street, New York.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

IRVING S. MANHEIMER,
Signature of Business Manager.

Sworn to and subscribed before me this 10th day of October, 1934.

(SEAL) MAURICE COYNE,
Notary Public.

(My commission expires March 30, 1936.)

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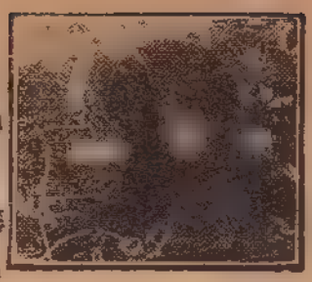

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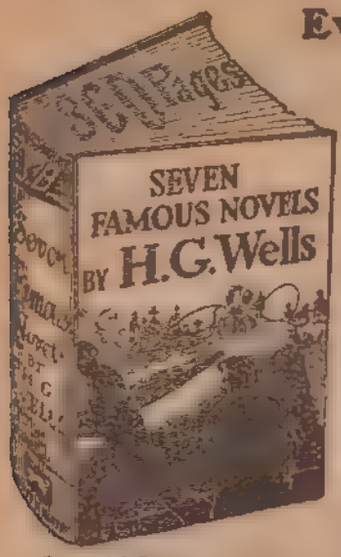

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Forrest J Ackerman, Eando Binder, Jack Darrow, Edmond Hamilton, David H. Keller, M D., P. Schuyler Miller Clark Ashton Smith and R. F. Starzl Hugo Gernsback, Executive Secretary, Charles D Hornig Assistant Secretary

The SCIENCE FICTION LEAGUE is a membership organization for the promotion of science fiction There are no dues, no fees, no initiations, in connection with the LEAGUE No one makes any money from it; no one draws any salary The only income which the LEAGUE has is from its membership essentials. A pamphlet setting forth the LEAGUE'S numerous aspirations and purposes will be sent to anyone on receipt of a 3c stamp to cover postage.

One of the purposes of the SCIENCE FICTION LEAGUE is to enhance the popularity of science fiction, to increase the number of its loyal followers by converting potential advocates to the cause To this end the SCIENCE FICTION LEAGUE supplies members with membership letterheads, envelopes, lapel buttons and other essentials As soon as you are enrolled as a member, a beautiful certificate with the LEAGUE'S seal will be sent to you, providing 15c in stamps or coin is sent for mailing and handling charges However, this will be given free to all those enrolled members who find it possible to call personally at Headquarters for it

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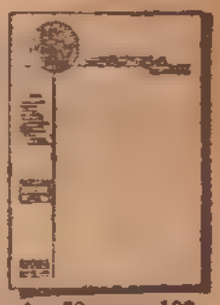

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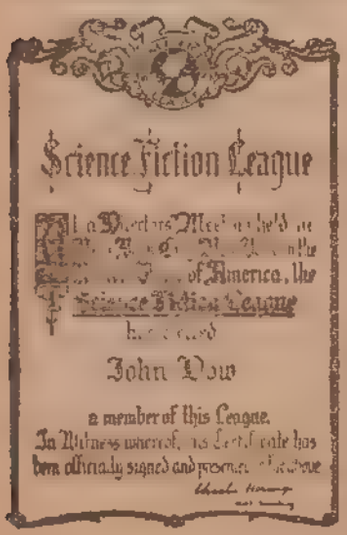

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WONDER STORIES is the voice of the SCIENCE FICTION LEAGUE—**a monthly department appears in the magazine.**

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SCIENCE FICTION LEAGUE

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I, the undersigned, herewith desire to apply for membership in the SCIENCE FICTION LEAGUE. In joining the LEAGUE, I understand that I am not assessed for membership and that there are no dues and no fees of any kind. I pledge myself to abide by all the rules and regulations of the SCIENCE FICTION LEAGUE, which rules you are to send me on receipt of this application.

I belong to the following class (put an X in correct space): ( ) Professional; ( ) Business; ( ) Student; ( ) ..... (Please print information)

Name.....Age.....

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I enclose 15c, for postage and handling, for my Membership Certificate.

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Please send me the following SCIENCE FICTION LEAGUE essentials listed in this advertisement (Please print information)

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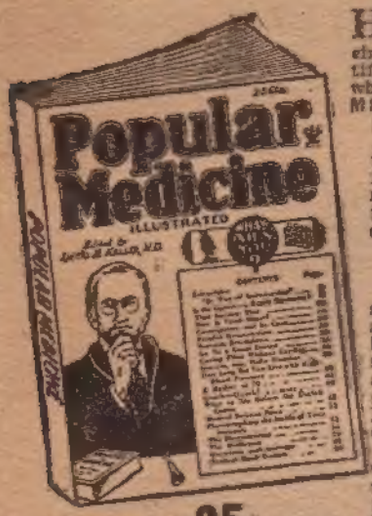
Know Thyself!



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The X-Ray Reveals—Is the Appendicitis Operation Necessary?—Routine Health Examinations—When January Marries May—Poison in Foods—Machine Lengthens Bones—The Household Medicine Closet—Have Your Health Measured—This Eczema Nuisance—Varicose Veins—Boils, Their Cure and Treatment—Asthma and Hay Fever—What to Do Before the Doctor Comes—and other features.

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TIRE USERS by the thousands all over the U. S. A. vouch for the LONG, HARD SERVICE, under severest road conditions of our standard brand Tires reconstructed by the ORIGINAL SECRET YORK PROCESS. OUR 18 YEARS IN BUSINESS makes it possible to offer tires at LOWEST PRICES in history with 12 months guarantee.

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BALLOON Tires

Size Rim	Tires	Tubes
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29x4.50-20	2.35	0.85
30x4.50-21	2.40	0.85
28x4.75-19	2.45	0.90
29x4.75-20	2.50	0.90
29x5.00-19	2.65	1.05
30x5.00-20	2.85	1.05
28x5.25-18	2.90	1.15
29x5.25-19	2.95	1.15
30x5.25-20	2.95	1.15
31x5.25-21	3.25	1.15
28x5.50-18	3.35	1.15
29x5.50-19	3.35	1.15
30x6.00-18	3.40	1.15
31x6.00-19	3.40	1.15
32x6.00-20	3.45	1.25
33x6.00-21	3.65	1.25
32x6.50-20	3.75	1.35

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Size	Tires	Tubes
30x3	$2.25	$0.85
30x3½	2.35	0.75
31x4	2.95	0.85
32x4	2.95	0.85
33x4	2.95	0.85
34x4	3.25	0.85

Size	Tires	Tubes
32x4½	3.35	1.15
33x4½	3.45	1.15
34x4½	3.45	1.15
30x5	3.65	1.35
33x5	3.75	1.45
34x5	3.75	1.45

HEAVY DUTY TRUCK TIRES

Size	Tires	Tubes
30x5	$4.25	$1.95
34x5	4.25	2.00
32x6 (8)	7.95	2.75
32x6(10)	8.95	2.75

Size	Tires	Tubes
36x6	9.95	3.95
34x7	10.95	3.95
36x8	12.45	4.25
40x8	15.95	4.95

ALL OTHER SIZES

SEND ONLY $1.00 DEPOSIT with each tire ordered. ($4.00 deposit on each Truck Tire.) We ship balance C.O.D. Deduct 5 per cent if cash is sent in full with order. ALL TUBES BRAND NEW—GUARANTEED. Tires failing to give 12 months' service replaced at half price. ORDER NOW!

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Pave the way to more sales with actual names and addresses of Live prospects.

Get them from the original compilers of basic list information—up to date—accurate—guaranteed.

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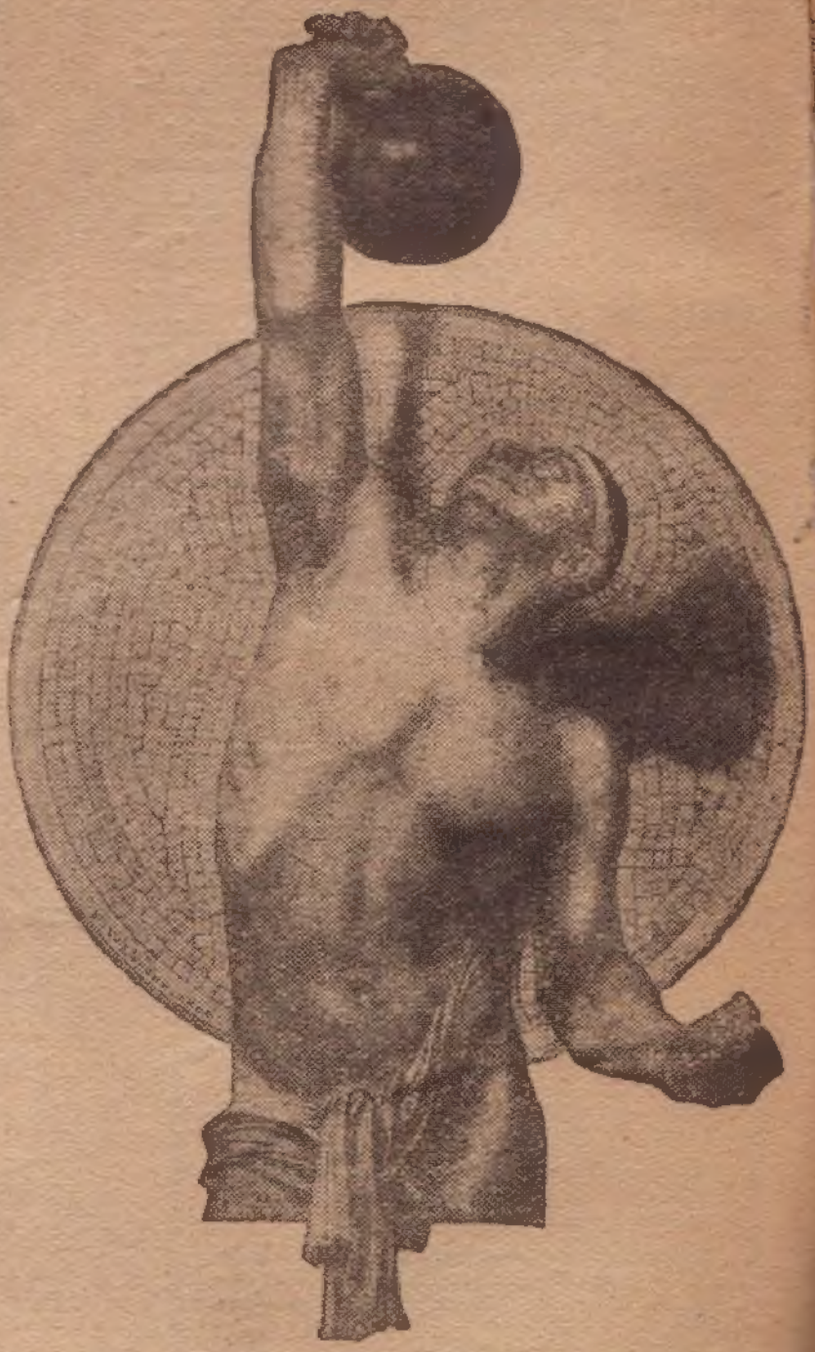
Learn About My Perfected Unique Rupture Invention!

Why worry and suffer with that rupture any longer? *Learn now about my perfected rupture invention.* It has brought ease, comfort, and happiness to thousands by assisting Nature in relieving and curing many cases of reducible hernia! *You can imagine how happy* these thousands of rupture sufferers were when they wrote me to report relief, comfort and cures! How would YOU like to be able to *feel* that *same* happiness—to sit down and write me such a message—a few months *from today?* Hurry—send coupon quick for Free Rupture Book, PROOF of results and invention revelation!



Mysterious-Acting Device Binds and Draws the Broken Parts Together as You Would a Broken Limb!

Surprisingly—continually—my perfected *Automatic* Air Cushions draw the broken parts together allowing Nature, the Great Healer, to swing into action! All the while you should experience the most *heavenly* comfort and security. *Look!* No obnoxious springs or pads or metal girdles! *No* salves or plasters! My *complete* appliance is feather-lite, durable, invisible, sanitary and *CHEAP IN PRICE!* Wouldn't YOU like to say "good-bye" to rupture worries and "hello" to NEW freedom . . . NEW glory in living . . . NEW happiness—with the help of Mother Nature and my *mysterious-acting* Air Cushion Appliances?

Rupture Book FREE!

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Rush me your new Free Book, amazing rupture method revelation, proof of results, all without obligation, and in plain, sealed envelope.

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PROOF!

Reports on Reducible Rupture Cases

"LIFTS 400 LBS.!"

"Have no further use for your Appliance as I'm O. K. Wore it a year. I now can lift 400 lbs., without any fear."—John L. Holgea, 636 W. Locust St., York, Pa.

"CAN RUN UP HILL"

"I had a rupture about 14 years, then wore your Appliance for 3. It is about a year since I threw it away. I feel fine, gaining weight nicely. I can run up and down hill which I never could before." — Mr. J. Soedarstrom, 2909 Trowbridge Ave., Cleveland, O.

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My invention is never sold in stores nor by agents. Beware of imitations! You can get it only from my U. S. factories or from my 33 foreign offices! *And I'll send it to you on trial!* If you don't like it—if it doesn't "work"—it costs you NOTHING! But don't buy now. Get the facts about it FIRST! Write me today. I'll answer in plain, sealed envelope with amazing information free. Stop Your Rupture Worries; send coupon!

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163 State St. Marshall, Mich.

HOW A "WASH-OUT" TURNED INTO A KNOCK-OUT!

SEE, I'M GLAD I SAW YOU OVER HERE ALICE!
YES, JIM, IT'S NICE YOU CAME OVER AND— OH, HERE COMES THAT TERRIBLE PEST AGAIN
HELLO BABY! HOW ABOUT A LITTLE SWIM TOGETHER?
OH, STAY AWAY FROM ME! — JIM, WILL YOU MAKE THIS MAN LEAVE ME ALONE
SAY, LOOK HERE — ER LOOK HERE NOW....
AW — SHUT UP SKINNY! ONE MORE WORD AND I'LL KNOCK THE DAYLIGHTS OUT OF YOU — YOU WASH-OUT
YES — A FINE WASH-OUT YOU TURNED OUT TO BE, JIM MASON
AW, LISTEN ALICE — I DIDN'T — ER —
THAT NIGHT
A "WASH-OUT," EH? WELL, I'M FED UP BEING A SKINNY, NO-MUSCLE RUNT. HERE! CHARLES ATLAS GUARANTEES HE CAN GIVE ME A REAL HE-MAN BODY A NEW WAY. OK. — I'LL SEND FOR HIS FREE BOOK AND FIND OUT HOW.
LATER
CHARLES ATLAS KEPT HIS PROMISE, ALL RIGHT, BOY JUST LOOK AT THOSE BIG MUSCLES! MAYBE I WAS A "WASH-OUT" BEFORE — BUT I COULD LICK MY WEIGHT IN WILDCATS NOW.
THERE'S THAT SAME BIG BULLY TRYING TO GET FRESH WITH ALICE AGAIN... HEY YOU LEAVE THAT GIRL ALONE
OH YEAH? WELL LISTEN GUY — JUST SCRAM!
"SCRAM" NOTHING SLAM YOU MEAN — AND SEE HOW YOU LIKE IT!
OH JIM — THANK GOODNESS YOU HAVE BECOME THE REAL MAN I HOPED YOU'D BE.

The 97-Pound Weakling Who Became "The World's Most Perfectly Developed Man"

THEY used to think there wasn't much hope for me. I weighed only 97 pounds. I was a sickly scare-crow. Then I discovered *Dynamic-Tension*. It gave me the body that twice won the title, "The World's Most Perfectly Developed Man."

Now I make you this amazing offer. *At my own risk* I'll give you PROOF *in just 7 days* that my same method can make you over into a NEW MAN of giant power and energy.

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No "ifs"—"ands"—or "maybes." Just tell me where you want handsome, powerful muscles. Are you fat and flabby? Or skinny and gawky? Are you short-winded, pepless? Do you hold back and let others walk off with the prettiest girl, the best jobs? *Give me just 7 days!* I'll PROVE that *Dynamic-Tension*—without any pills or unnatural dieting or machines and pulleys that may strain your heart or other vital organs—can make you a healthy, confident, powerful HE-MAN! In just a few minutes a day! Mail coupon NOW for my illustrated book, "Everlasting Health and Strength." Tells all about *Dynamic-Tension*. Shows actual photos. It's a valuable book! And it's FREE. Send for your copy *today*. **Address me personally: Charles Atlas, Dept. 106-M, 115 East 23rd St., New York, N.Y.**

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I want the proof that your system of *Dynamic-Tension* will make a New Man of me—give me a healthy, husky body and big muscle development. Send me your free book, "Everlasting Health and Strength."

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City ..... State .....

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AUG 2 - 1936

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BEFORE you buy any radio write for the new FREE 1935 Midwest "Fifteenth Anniversary" catalog and see for yourself the many reasons why 110,000 satisfied customers bought their radios direct from the Midwest Laboratories and saved from ⅓ to ½. Why pay more than the direct-to-you laboratory price?

You, too, can make a positive saving of from 30% to 50% by buying this more economical way. Learn why Midwest outperforms sets costing up to $200.00 and more. Never before so much radio for so little money! Midwest gives you triple protection with: One-year guarantee, foreign reception guarantee, money-back guarantee.

SENSATIONAL HIGH FIDELITY RECEPTION

This bigger, better, more powerful, clearer-toned, super selective radio gives you absolute realism—assures you of life-like, crystal-clear tone—unlike anything you have ever experienced before! You will hear one more octave—overtones—that cannot be brought in with ordinary radios. Now hear every instrument, every voice, every shade and inflection of speech. Take advantage of the amazing 30-day FREE trial offer. Send coupon today for FREE catalog.

ALL FIVE WAVE BANDS

Only Midwest covers a tuning range of 9 to 2400 meters (33 Megacycles to 125 KC.)—enabling you to easily and successfully tune in foreign stations up to 12,000 miles away with crystal-clear, loud-speaker reception.

All 5 Wave Bands enable you to enjoy today's finest High Fidelity American programs. In addition, you get Canadian, police, amateur, commercial, airplane and ship broadcasts and derive new delight and new excitement from unequalled world-wide broadcasts . . . England, France, Germany, Spain, Italy, Russia, Australia, etc. Send today for money-saving facts!

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Midwest Cannot Be Equalled

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Concord, Ga.—There is not a better radio than the Midwest. Everyone says they never heard such a wonderful tone. We have gotten many foreign stations very clearly. Our Midwest is worth more than we paid for it. Mrs. M. G. Monty, 179 Marshall St.

Gets World at Pole Direct

Nemmonid, La.—The greatest distance I have received so far is Byrd at the Pole direct, not a relay through ESX. EAQ and VK2ME come clearly as locals. DJB GSC, GSB, come in extremely well. R. T. Parney.

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The Midwest 36-page 1935 catalog pictures a complete line of beautiful, artistic deluxe consoles and chassis, in four colors. Write for new FREE catalog today!

Midwest long-range radios are priced as low as..... $27.50

40 ADVANCED 1935 FEATURES.....

...and 16 tubes make this Super High Fidelity Radio today's most powerful long distance receiver. Its many exclusive features include: Micro-Tenuator... Fidel-A-Stat... Separate Audio Generator... Ceramic Coil Forms, etc.

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This dial takes the guesswork out of tuning. Now Midwest guarantees that inexperienced persons can secure good foreign reception. Send for FREE miniature of actual rotating dial—which clearly shows the advantages of these sensational features:

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2. Call letters of American Broadcast Stations printed on dial and illuminated
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